STUDY OF LIFE EVENTS AND PREMORBID FUNCTION IN RECENT ONSET SCHIZOPHRENIA

Dissertation submitted to

THE TAMIL NADU DR. M. G. R. MEDICAL UNIVERSITY

In partial fulfillment of the regulations
for the award of the degree of

M. D. BRANCH - XVIII

M D. Psychiatry

INSTITUTE OF MENTAL HEALTH

MADRAS MEDICAL COLLEGE

CHENNAI, INDIA

APRIL 2016

CERTIFICATE

This is to certify that the dissertation titled**, "STUDY OF LIFE EVENTS AND PREMORBID FUNCTION IN RECENT ONSET SCHIZOPHRENIA"** is the bonafide work of **Dr. THIRUMALAI. S**, in partial fulfillment of the requirements for M. D. Branch – XVIII (Psychiatry) examination of The Tamilnadu Dr. M. G. R. Medical University, to be held in April 2016. The period of study was from May 2015 to August 2015.

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CERTIFICATE OF GUIDE

This is to certify that this dissertation titled, **"STUDY OF LIFE EVENTS AND PREMORBID FUNCTION IN RECENT ONSET SCHIZOPHRENIA"** is the original work of **Dr. THIRUMALAI. S**, appearing for M.D. (Psychiatry) degree examination in April 2016, is an original bonafide record of work done in the year 2015 by her under my guidance and supervision in partial fulfilment of requirements of the Tamil Nadu Dr. M.G.R. Medical University, Chennai. I forward this to the Tamil Nadu Dr. M.G.R. Medical University, Chennai, Tamil Nadu, India.

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DECLARATION

I, **Dr. THIRUMALAI. S,** solemnly declare that the dissertation titled, ***"STUDY OF LIFE EVENTS AND PREMORBID FUNCTION IN RECENT ONSET SCHIZOPHRENIA"*** is a bonafide work done by me at Institute of mental health, Chennai, under the guidance and supervision of **Dr. R. JEYAPRAKASH**. M. D, D. P. M, Professor, Director, Institute of Mental Health, Madras Medical College. during the period from May 2015 – August 2015.

The dissertation is submitted to The Tamilnadu Dr. M. G. R. Medical University towards part fulfillment for M. D. Branch XVIII (Psychiatry) examination.

Place: **Dr. THIRUMALAI. S**

Date:

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INSTITUTIONAL ETHICS COMMITTEE
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CERTIFICATE OF APPROVAL

To
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Dear Dr. S.Thirumalai,

The Institutional Ethics Committee has considered your request and approved your study titled **"A study of life events and premorbid function in recent onset schizophrenia" No.19052015.**

The following members of Ethics Committee were present in the meeting held on 12.05.2015 conducted at Madras Medical College, Chennai-3.

1.	Prof.C.Rajendran, M.D.,	: Chairperson
2.	Prof.R.Vimala, M.D., Dean, MMC, Ch-3	:Deputy hairperson
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10.	Tmt.Arnold Saulina, M.A., MSW.,	: Social Scientist

We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study and SAE occurring in the course of the study, any changes in the protocol and patients information/informed consent and asks to be provided a copy of the final report.

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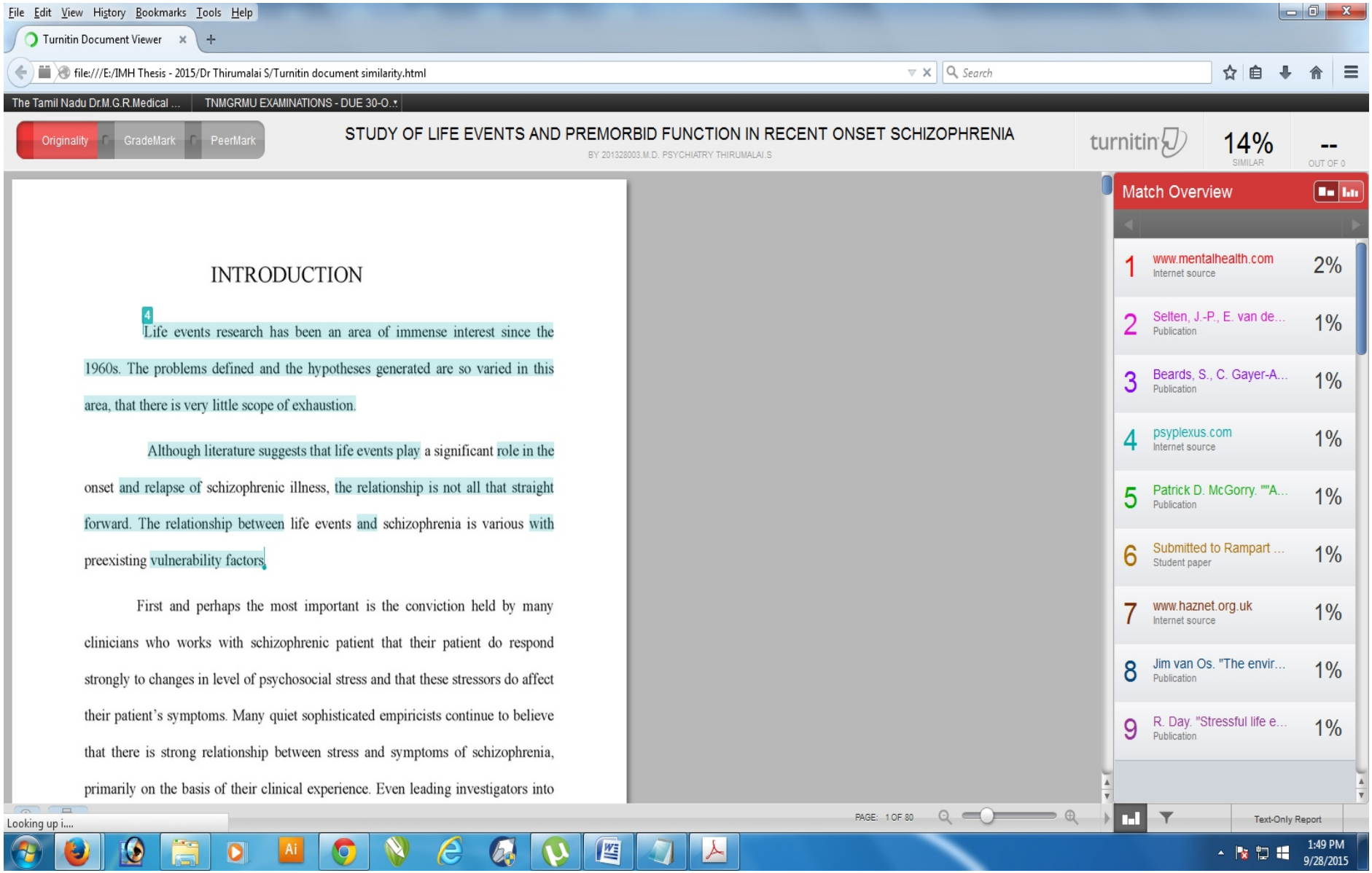
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INTRODUCTION
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Although literature suggests that life events play a significant role in the onset and relapse of schizophrenic illness, the relationship is not all that straight forward. The relationship between life events and schizophrenia is various with preexisting vulnerability factors.
First and perhaps the most important is the conviction held by many clinicians who works with schizophrenic patient that their patient do respond strongly to changes in level of psychosocial stress and that these stressors do affect their patient's symptoms. Many quiet sophisticated empiricists continue to believe that there is strong relationship between stress and symptoms of schizophrenia, primarily on the basis of their clinical experience. Even leading investigators into
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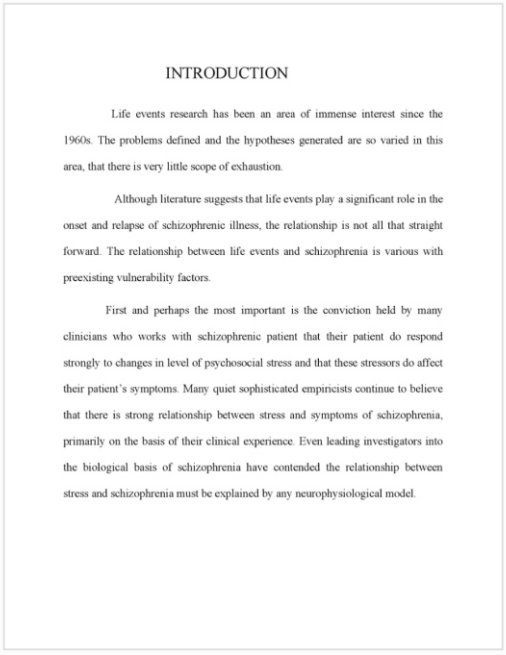

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CONTENTS

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Variety of studies shows that some persons are relatively resistance to stress and not at all developing the disease. Some persons are extremely vulnerable to stress and prone to develop the disease.

For the past ten decades, the researchers have been continuously working in the field of life events and trying to find how the environment and individual affect each other

Life events can occur in various settings (family, health related, and working place) or can be age related (School setting, marriage, divorce & retirement), illness related (getting disease, or trauma).

The relationship between the occurrence of life events and etiology of schizophrenia has been controversial one. Current studies are mainly focusing on the neurobiology of stress and its impact on nerve cells by production of cortisol and subsequent formation of synaptic remodeling.

Studies that focusing the relationship between postnatal events and neurodegenerative changes, shows the evidence gene environment interaction and confirmed by structural changes observed in neuroimaging.

Many studies found that two or three stressful life events occurred before the onset of schizophrenia compared to controls.

The etiology of schizophrenia is heterogeneous. Various theories, hypothesis and models have been proposed for the causation of schizophrenia such as genetic theory, biochemical theory, social deficit hypothesis, neuro developmental model, stress vulnerability model, and neuronal stress vulnerability model. The trauma & stressful life events are neither necessary nor sufficient to produce schizophrenia. But stress acts as a triggering factor in preexisting vulnerability.

Studies examining the association between stressful life events and the onset of schizophrenia can be further divided into 3 groups:

Some studies found that significant increase in "independent" life events such as death of spouse, before the onset of schizophrenia. The events act as a triggering factor. Second set of studies found that significant increase in “non- dependent” life events such as loss of job failing in the exam. This event may occur as a consequence of patient behavior itself like poor functioning of individual as he may in prodrome of illness or subtle onset of schizophrenic symptoms. The third set of studies shows that there is no association between stressful life events and the onset of illness.

Many investigators have advocated such diathesis-stress or vulnerability and stress approaches to the understanding of schizophrenia over the past three decades.

Hence schizophrenia can be viewed as a disease of brain probably neuro developmental in origin. This hypothesis is supported by the fact there is an increased incidence of schizophrenia in identical twins and also biological relatives of patients. Moreover many schizophrenics show abnormal social personality traits during the premorbid period. Poor premorbid social adjustment and premorbid traits like schizoid, paranoid traits were seen in schizophrenics consistently.

These observations have given risk to the neurodevelopmental formulations of schizophrenia. Broadly these propose the existence of a non progressive brain lesion of genetic or early environmental in origin the cognitive and behavioral effect of such a lesion are postulated to change over time as the nervous system around it continue to develop. In the immature brain, the functional effects are subtle, with relatively minor deficits in traits characteristics such as affective non responsiveness and sociality. Only as brain reaches functional maturity in the adolescence do the psychotic symptoms of delusions, hallucination and thought disorders become manifest.

Hence the factors which are helpful for us to identify the disease process at the earliest so that the damage done by the disease process both neurological and psychological can be minimized if not arrested. To do this an understanding of factors involved in predisposing, precipitating

and perpetuating the dreadful disease must be studied. These include the predisposing factors such as biological and also the vulnerability can manifest as poor premorbid traits, family history of psychiatric illness etc.

The precipitating factors may be life events which sometime are due to the disease process itself. The duration of untreated psychosis must be studied and the relationship of these factors with the symptomatology can be provide useful details of which of symptoms are associated with early treatment seeking behavior. Finally the socio demographic profile of the patient is very important in factors such as precipitations of illness and also towards the illness and early treatment seeking behavior. Hence, future research should focus on identifying these intervening variables and understanding their effect on stress – illness relationship

REVIEW OF LITERATURE

The possible relationship between stressful life events and the onset of schizophrenia has created immense interest among investigators from various theoretical backgrounds. Most of the literature has focused on onset of schizophrenia. Before going to discuss about the life events, the etiological models of schizophrenia can be discussed in detail relation with life events and stressors.

THE ETIOLOGICAL MODELS OF SCHIZOPHRENIA

The etiology of schizophrenia is heterogeneous. During this decade various theories ranging from psychosocial ideas to biological, genetic and environmental hypotheses and varies models have been proposed in relation to etiology of schizophrenia.

NEURAL DIATHESIS–STRESS MODEL OF SCHIZOPHRENIA

The neuronal stress-diathesis model of schizophrenia emphasizes that stressors, through the effect on corticosteroid production, act through a pre existing vulnerability produce or exacerbates the symptoms of schizophrenia. (Simon R. Jones et al 2006).

The focus on the neuro-biology of stress response in schizophrenia, this model says stressors as a homogeneous group. Recent evidence has shown that, in normal individuals, cortisol and related steroids are most

strongly generated in response to the stressors that results from perceived very uncontrollable threats to important goals. The model hypothesized that the stressors may produce or exacerbate the symptoms of psychosis in those with a preexisting vulnerability.

Walker and Diforioet al (1997) propose the mechanisms through which stressors may be harmful to person who having genetic vulnerability to schizophrenia and may actually precipitate the initial schizophrenic episode.

In this model he says that stress acts through the neuro endocrine pathway. Stress acts on hypothalamic –pituitary axis and increase the cortisol level. The increased cortisol level acts on neural transmission in brain particularly on DA neurotransmission and produce the symptoms of schizophrenia.

He found higher level of cortisol in schizophrenic individual at the onset of illness and association with stressors. Walker and Diforioet et.al., (1997)

THE SOCIAL DEFEAT HYPOTHESIS (Jean-Paul Selten et al)

The social defect hypothesis was developed in 2005, following the concept of Occam's razor. Long-term and continues exposure to the experience of social defect may lead to sensitization of the mesolimbic dopamine (DA) system and thereby elevated the risk for schizophrenia**.** This hypothesis said that the social defect is a common five schizophrenic risk factors like migration, urbanization, low intelligent quotient, childhood adversities, and illicit substance use. Sensitization is a process in which exposure to a stressful stimulus, such as adverse life events and stressor, results in an enhanced DA response to subsequent exposures.

Jean-Paul Selten et al (2003) found that genetically vulnerable to Schizophrenia persons moving from rural to urban area, fail to integrate in their home country, prefer to live in anonymity, are experiencing childhood trauma and stressors, because of their poor social skills, and use illicit substance because they are unhappy, are prone to develop schizophrenia. He found that social defect is a consequence and not a cause.

Collip et al (2008) found that in sensitization hypothesis, he did not find any specific stressors, in etiology of schizophrenia, rather than he finds that stressors act as a sensitize, involving in pathogenesis of schizophrenia. He also finds that sensitization is progressive sequence in

subsequent stimulus, and greater importance in pathogenesis of schizophrenia.

Morgan et al (2008) proposed that aggregative social defect and stressors in children, adolescent and adult increases risk for development of schizophrenia. The authors identified the social disadvantage in the area of separation or death of parents, unemployment, peer relationships, and social networks and social participation. Thus, the concept of social disadvantage is somewhat greater than that of social defect and does not specify how social adversities and stressors translates into increased schizophrenic risk. No definite evidence shows that general populations in low-income and developing countries are at increased risk, and the low socioeconomic status of the parents and poor education of parents are generally not the increased risk factor for schizophrenia.

Hoffman et al (2007) proposed that greater levels of isolation leads the social brain to produce false social meaning in the form of hearing of voices and suspiciousness representing other person or agent. This *deafferentation social* hypothesis centers on the concept that the brain, if deprived from afferent input of informations, will produce this information by itself. Thus, hypothesis postulates that isolation is a risk factor by itself, while the social defect hypothesis requires isolation to occur in a context of defect.

VULNERABILITY AND STRESS MODEL

Keith H. Nuechterlein and Michael E. Dawson (1984*) found that* vulnerability models of schizophrenia integrate paradigms based on heredity, abnormal brain structure and functioning, physiological and psychological development, and early learning. Factors that contributing to developing schizophrenia are subsumed under the concept of vulnerability, which interacts with stress to create a threshold for symptomatic schizophrenia.

Norman and Malla(1993a) propose that as the vulnerability is very high even minimal stressor can precipitate an episode of schizophrenia. On the other hand when the vulnerability is very low, large or highly stressful events are needed

THE ENVIRONMENT AND SCHIZOPHRENIA

Jim van Os et al (2010) proposed that Psychotic syndromes like schizophrenia can be noted and hypothesized as deficit in adaptation to social context and to the changing environment. Often heritability is emphasized as associating with vulnerable factors. Onset of schizophrenia is associated with adverse environmental factors and stressors such as childhood adversity, urbanization, minority group position and substance abuse like cannabis, suggesting that exposure to

stressors may have a great impact on the developing 'social' brain during sensitive periods of life.

Therefore heritability, as an index of genetic influence, may be of limited explanatory power unless viewed in the context of interaction with social effects. Longitudinal research in this field is needed to disclose gene -environment interactions that determines how expression of vulnerability in the general population may give rise to more severe psychopathology.

THE EVIDENCE OF CHILDHOOD TRAUMA

Read j et al (2005) found that the relationship between childhood trauma and onset of psychosis like schizophrenia. He found that several psychological and biological derived mechanisms by which childhood trauma and adversities elevates risk for schizophrenia. Integration of these different levels of analysis may stimulate a more genuinely integrated bio-psycho-social model of psychosis.

Morgan, C et al (2007) found that childhood trauma producing psychosis is controversial and debatable. Childhood abuse during early period certainly causes prolonged period of suffering, and this may increase the distress experienced by the person who develops psychosis in adulthood and leads to very worse outcomes. The implications of

childhood abuse and trauma for clinical practices require very careful consideration. His review was contrary to the impression gained from the review of Read et al.

NEURO DEVELOPMENTAL MODEL

Weinberger et al 1987 proposed the neuro developmental hypothesis. This hypothesis proposes that one group of schizophrenia is as the result of early brain insult, which occurs either pre in antenatal, intranatal or postnatal. This affects the growth of the brain in early developmental period. Further this abnormality expressed in mature brain. This brain lesion also may occur as the result of inheritance of abnormal genes.

According to the neuro developmental model, schizophrenia is caused by abnormal interaction between gene and the environment during the early critical periods, which affects the neuronal differentiation and nerve cell apoptosis. There is marked defect in nerve cell maturation in early period of brain development in schizophrenic patients. (Priya Bajaj and Sharma 2004).

Neuro developmental model has been supported by following evidence.

1. Increased Obstetric related complications surrounding the birth of patients with schizophrenia (Huttunen, Mechon, Mednick 1994)

2. Presence of minor physical anomalies (Huttunen, Mechon, Mednick 1994)

3. Neurological dysfunction, cognitive defect and behavioral dysfunction will be present before the onset of schizophrenia.

4. Schizophrenic disease not explained by the process of neuro degeneration

5. The stability of brain structure preserved over time (Syvalahti 1994).

6. The absence of post mortem evidence for neuro degeneration like gliosis.

However some authors do dispute the neuro development theory (Cotter, Pariante 2001).They review that based on neuroimaging neuro pathological studies the process of damaging is not entirely neuro developmental. They say that brain changes probably occur after the onset of first episode psychosis. This evidence was proved by neuro imaging technique (Cotter, Pariante 2001). They are contrary to the neuro developmental model.

LIFE EVENTS

Life events have been defined as those whose advent are either indicative of or require significant change in the ongoing life pattern of the individual (Holmes, Rahi 1967).

Life events research continues to be an active area work for better understanding the etiology, course or relapse of psychotic disorders. Major efforts have been directed at finding the role of life event in the evolution of onset of schizophrenia.(Brown & Birely 1968, Al Khani et.al.1986)

TYPES OF LIFE EVENTS (stephanie beards et al 2013)

1) Dependent life event

Stressful events that are results of a person's own behavior or character. Someone may lose their job because they are not working as efficiently due to a deterioration in their attention and concentration. They are influenced by prior mental status and personality development, such as relationship difficulties. Dohrenwend et al found that increase in dependent events (non-fateful events) before the onset of illness

2) Independent events

Events that are not a result of a person's own behavior or character like death of spouse, accident etc. Raune et al, noted that 95% of

schizophrenia experienced a life events one year before development of illness, and 76% 0f these events were independent. (Raune et al, 2009)

3) Intrusive events

Intrusive events are unusual, unexpectable and unpredictable like road traffic accident, physical assaults and major surgical operations, and associated with increased risk of psychosis (Raune et al, 2009)

4) Mild, moderate, and severe life events

Life events are divided according to severity score . Moderate and severe life events associated with onset of psychotic illness. (Bebbington et al, 1993)

The detrimental effect of stress on the course of schizophrenia take been observed by clinicians since Kraeplin remarked that changes in a patients environment often terminated a period of symptomatic remission. He also noted that returning disturbed individuals to their families sometimes produce dramatic improvement.

Two major sources of stress have been extensively investigated

1. Ambient stress in the everyday environment

2. Stressful life changes and events(Fallon et al 1986)

Ambient stress

When caregivers expressed feelings that were critical of the index patent's behavior or were involved in an intrusive way with the patient the risk of recurrent episodes of schizophrenia was high. The term Expressed Emotion" is used to describe this emotional response. (Fallon et.al 1986)

This stress may be due to economic deprivation. Overcrowding Poor sanitation and violent crime. It may contribute to the poorer outcome of schizophrenia on the lower socio economic classes in the cities of developed countries. The absence of such urban stress may contribute to the finding that schizophrenia runs a more benign course in rural areas of developing countries.

Another source of environmental stress concerns discrete events or changes in the course of a person's life. Studies indicate that episodes of schizophrenia may be triggered off by a wide variety of life events. The distinction between life events of ambient stresses is somewhat arbitrary and it is clear that there is considerable interaction between the two.

STRESSFUL LIFE EVENTS AND SCHIZOPHRENIA

The majority of studies found that the life events were statistically elevated before the onset of schizophrenia with time period was ranging from 3 months to 3.6 years. Brown and birley et al (1968) found that the life events were elevated in 3 week before the onset of psychotic symptoms. But brown sample was small that was only 50 patients.

Faravelli c et al (2007) and Dohrenwend et al (1987) found that life events were two to three times elevated in psychosis than normals. Further, the general population study of young people found that life events experienced in previous three years were associated with higher rates of psychosis development.

Bebbington et al (1993) found that there were increased number of severe and moderate life events (compared to mild events) in three months before the onset of psychotic symptoms in schizophrenia. Severe and moderate life events were found to be 52% and mild were only10%.

Raune et al (2009) showed that more intrusive events, like physical injury, surgical procedure, and accident were more associated with elevated life events score. And elevated life events were more common in 3 months before the onset of illness .

Raune et al (2009), Faravelli c et al (2007) and Bebbington et al (1993) found the difference between dependent and independent events. Raune found that 76% of life events found in cases are independent

events. Brown and briley (1968) found that 46% of cases were exposed to independent events only 14% were found in controls.

But in Dohrenwend et al (1987) found that there were increased in "non-fateful" events (events that are influenced by prior mental status and personality traits) in one year prior to the onset of illness.

Most of the studies found that cases were experiencing likely three times more life events than controls in one year before the onset of illness (Stephanie beards et al 2013). And the most of the life events were intrusive events which are relevant to emergence of schizophrenia.

It is frequently stated in the scientific literature that schizophrenia and its symptoms are Influenced by stressful life events (Brown & Birley 1968, Weinberger1987, Canton & FraccoIn 1985, Schwartz & Myers 1977, Steinberg & Durell 1968)

In addition there has been considerable speculation about why schizophrenia patients are likely to be perticulerly susceptible to the effects of stress (Nuechterlein &Dawson 1984).

There are two important aspects of the association of stressful life events and schizophrenia.

1. The association between stressful life events in schizophrenics compared with normal persons and the
2. Vulnerability of the individual and the nature of the life event.

In an elaborate review of stressful life events and schizophrenia, Dohrewend (1981) says that

1. Stressful life events occur outside the control of the patient and play a role in the etiology of schizophrenia episodes.
2. Some of these independent events occur to persons later he develops schizophrenia because there is a hereditary vulnerability of this disorder.
3. Stressful life events causes only a small impact on the onset and course of schizophrenia is premature.

A similar vulnerability model presented by Nuechterlein & Dawson (1984) is given below. Accordingly the primary components of this model shows the following 4 major categories.

1. vulnerability properties from inside of the person
2. External environmental impact that comes from outside
3. Transient intermediate (between internal and external factors) states
4. Outcome behavior like expression of symptoms.
5. episodes in already established manic–depressive

Studies Investigating the Associations Between stressful Life Events and onset of schizophrenia (Stephanie Beards et al)

Author And year	Design	Sample	Measure of Life Events	Life Events Period	Main Findings (reporting life events)
Day et al (1987) WHO Study	Within Cases	386 cases with Psychosis	Life Events Schedule (WHO)	6 months before onset of psychosis	cases 21- 87% *P* < .01
Gureje and Adewunmi (1988)Nigeria	Case-control	42 cases and 50 controls	Paykel's life events checklist	6 months before to Onset	reporting life events cases 7%, controls: 24% *P* < .01
Chakraborty et al (2007) India	Between-patient	18 cases ATPD & 20 control patients with mania	PSLES (Singh et al 1984)	6 months before Onset	cases: 0.72 manic patients: 0.20 *P* = .013
Faravelli et al (2007), Italy	Case and control	9cases and 123controls	LEDS (Brown 1989)	1 year before to onset	cases: 3 controls: 15 not significant
Raune et al (2009) UK	case-control comparisons	41cases with 548 Controls	LEDS	1 year before onset	cases: 14 controls:42 (OR = 5.0, 95% CI 2.4–10.7)
Mondelli et al (2010) UK	Case-control	50 cases 36 controls	Brief Life Events Questionnaire	6 months before onset	cases: 2.3 (SD 0.3) controls: 0.7 (SD 0.2) *P* < .001)
Brown and Birley (1968) UK	Case-control	50cases 325controls	LEDS	13 week before onset	cases:46% controls:14% *P* < .001
Canton and Fraccon (1985) Italy	Case-control	54 cases 54controls	Paykel's Interview	6 months before onset	cases: 33 controls: 4 *P* < .001
Al Khani et al (1986) Saudi	Case-control	48cases 62controls	LES(WHO)	1 year before onset	cases: 88%, controls: 71% (not significant)

Dohrenwend et al (1987) U .S	Case-control	66cases 197controls	(PERI) Dohrenwend et al 1978	1year before onset	cases: 0.89; controls: 0.25 ($P < .001$)
Bebbington et al (1993),Uk	Case-control	97cases 207controls	LEDS	6months prior to onset	cases: 27 controls: 21 $P < .001$
Lataster et al (2012) Netherlands	Cross-sectional	Random sample of 1722	(MEL; MaierDiewald et al 1983)	3.6 years prior to onset	psychotic experiences group: 7.49, controls: 5.98 $P < .001$)
van Nierop (2012) Netherlands	Cross-sectional	Random sample 6646 adults.	LTE	1 year prior to onset	experiences group: 66% controls:48% $P < .001$
Jenkins et al (2010) Tanzania	Cross-sectional	Random sample 899 adults	LTE	6 months prior to onset	Yes:117 (13%), no: 782 (87%) $P < .001$
Johns et al (2004) uk	Cross-sectional	Random sample8520 adults	Life events checklist	6 months	yes: 2136 (25%), no: 6384 p<00.1

In early study of Brown & Birley (1968) it was thought that relatively minor changes including those of a positive nature such as promotion in a job or forming a new friendship could trigger major exacerbations of schizophrenia. However later study has suggested that this is more likely when the levels of ambient tension (in these case EE) are already high (Left & Vaughn 1980). In low expressed emotions households, events of major stress appear necessary to overwhelm a person vulnerable to schizophrenia.

Canton & Fracon (1985) found that the (1985) found that the schizophrenia patients had more life events than controls for the 6 months

before the onset. And also have more life events than controls in the areas of working, health proplems, and peer and family relationship.

They also experienced more intrusive events than the normal controls. There are marked percentage of schizophrenic (72%) reported stressful life events with a significantly greater severity score (moderate to severe) than did the normal controls (41%).

Steinberg & Durell (1968) reported that there is a dramatic excess of cases occurring in the first months and throughout the first year of military service as compared with second year. The hospitalisation rate is highest in the first month and decreases regularly thereafter. The rate in first month is over six times that in the second year.

Bech & Worten (1972) reports that the idiosyncratic quality of the precipitants or schizophrenia decompensation illustrates with particular clarity, the private nature of the symbolic process of many schizophrenics. He says that is difficult to understand the relationship if any between the schizophrenic life situation prior to decomposition and the fact of his decompensation at a particular time in life.

According to Chung (1986) the most important findings for those patients with schizophrenia is that to four weeks before onset, had about three times more the life events than compared to normal controls.

Norman and Malla (1993) says that the link between life events and the course of schizophrenia is much more complex than current research suggests. The vast majority of life events do not precipitate exacerbations of symptoms and the overall impact of life event may be less than early studies suggested. Clearly the amount of stress induced by any particular event on any individual is determined by a wide range of factors such as the individual previous experience, preparedness, personality, physiologic & pathologic status, environmental support, preexisting stresses and current neuroleptic drug prophylaxis.

Norman and Malla (1993) in a review pointed out the presence of a relationship between life events and changing symptomatology over time in patients of schizophrenia. However, there is no strong evidence for higher levels of stress in schizophrenics as compared to general populations and other psychiatric disorders. It therefore, appears that other psychosocial variables have a role in the causation, course and outcome of schizophrenia. Indirect evidence from studies that show improved outcome of schizophrenia patients who received structured psychosocial inventions.

Varies psychosocial variables like coping; family burden and social support contribute to the understanding if the natural history of schizophrenia. In the interactive models of schizophrenia, social factors

are believed to have a role in formation, expression, maintenance and outcome of the illness.

LIFE EVENTS AND MARITAL STATUS

In their interesting study kulhara et al (1998) found that married schizophrenics experienced more number of life events than unmarried cases.

A contrasting result is given by Alkhani et al (1986). Exploring life events in married schizophrenia patients, Al khani et al (1986) reported a higher frequency of events in married female schizophrenics in the 6-month period preceding assessment. There was additional presence of event clustering in the 3 week period before onset of last episode of illness in the same subgroup.

Married schizophrenics reported higher levels of total stress score.

Overall, it appears that marriage leads to experiencing higher levels of stress without a corresponding increase in social support despite social support being a protective factor, it is not the only psychosocial variable of importance . As mentioned earlier, there is a need to study the influence of EE, quality of life, coping strategies etc. stress and their relations to relapse or prevention or relapse in schizophrenia. In fact, EE apart from having a probable influence for relapse (normal & malla,

1993b), could be just as important a variable for stability. Hence there is a need to study EE in schizophrenia patients, both stable and relapsed to determine its effect on the status of the patients.

The association between environmental stress and the course of schizophrenia that has been formulated thus far provides a rationale for the deployment of psychosocial strategies aimed at reducing the risk of exacerbation of florid symptoms of the disorder as promoters social functioning and reducing the handicaps with the deficit or negative futures of schizophrenia.

PREMORBID FUNCTIONING

Schizophrenia is well known illness that markedly affects individual's psycho social functioning. Premorbid assessment of psycho social functioning has become useful area of investigation. But it is affected by the disease process itself. Therefore considerable investigation has focused on assessment of individuals psycho social functioning before the onset of disease process ie the premorbid period.

Schizophrenia is considered to be a neuro developmental origin with early neuronal lesions affecting normal nerve cells maturational process. (Mccurry 1998; Weinberger 1987).

According to Larsen et al (2004), patterns of premorbid functional development in Schizophrenia suggest both neuro developmental and neuro regressive processes. Knowledge about premorbid function in psychosis can shed light upon theories of etiology of Schizophrenia.

Larsen et al (2004) assessed the social and academic dimensions of premorbid functioning in patients with first episode of psychosis. They compared the patient who had stable social functioning with deteriorating one. They found that stable social functioning patient had lower DUB, more friends and stable academic course. They were older at admission. They found that premorbid functioning had two dimensions. One was social and other was academic function. The both dimensions may be determined in early life of patient. The neuro developmental process explains the deterioration of social and academic function in early life. The neuro developmental process depends upon genetic and perinatal factors. If the above two functions are deteriorating in later life that is in adolescence, this is called neuroregressive process (reduction in synopsis of neuron).

The later sequelae have traditionally been called as degeneration and have been thought to arise from loss of brain neurons (neurodegeneration). But since PM studies have found loss of neutropil but not loss of neurons in brain of patients with Schizophrenia, the term

neuroregression is preferred for this process. The study Larsen et al (2004) clearly shows that the heterogeneity of Schizophrenia starts early, long before the onset of disease.

In their sample of patients, Larsen et al (2004) found that 40% of schizophrenic patient has good and stable social functioning. This finding was contrary to the neuro developmental model. The neuro developmental says that social dysfunction arise early and inevitable. Second, it seems that impaired social function in early life and deteriorating over time, psychosis case identification will be delayed. It may be the fact that social network of the patient is so small, and will not bring the patient to hospital or may the fact that social network adopted to the early behavior of the person and does not identify the transition psychotic behavior of the patient.

It is well established some adults with schizophrenia have abnormal premorbid traits from the days of kraeplin till now. These premorbid personality traits seems to correlate with poor prognosis early disease onset, cognate deficits and structural brain abnormalities (dalkin et al 1994);

According to forester et al (1991) schizophrenia were associated with more pre morbid schizoid traits and poor pre morbid functioning than a control population of affective illness. This is more in case of male

patients than in controls. According to Weinberger et al (1980) premorbid traits were associated with CT evidence of brain atrophy than with stable premorbid characters. The occurrence of premorbid functional impairment may reflect early neuro pathological manifestations of schizophrenia.

In a study conducted at Maudsley hospital, (Hollis 2000) found that 30% of adolescent Schizophrenia had defect in social development in the form of inability to make and keep friends. They also found that defect in premorbid sociability, defect in academic function, and defect in peer group relationship in adolescent onset schizophrenia. Hollis (1995) found that adolescent Schizophrenia has markedly higher rates of premorbid motor impairment, language defect, social communication defect, and socio emotional reciprocity impairment than normal controls

The negative symptom dimension was specifically associated with premorbid impairment. Most of the patients with Schizophrenia (some studies report as high as ninety percent) have premorbid functional impairment. (Eggers 1987; McClellan & MeCurry 1998).

McClellan and McCurr et al, 1998 found that social withdrawal and defect in peer group relationship, are characteristics and are equal to the negative symptoms of schizophrenia.

Studies by Asarnow et al 1994; Nicholson et al 2000, Ballageer et al(2005); have also reported increased risks of premorbid impairment in adolescent onset Schizophrenia. Premorbid characteristics such as being shy, introvert, withdrawn have been linked with poor prognosis in adolescent Schizophrenia. (Remschmidt 2000)

DURATION OF UNTREATED ILLNESS

Most of Studies have constantly found that many persons with newly diagnosed with schizophrenic illness experience significant delays in receiving the treatment skeate (2001); Ho (2003); McGorry (1996). Resent research investigating delay in taking treatment has mainly focused on the relationship between socio demographic profile and DUP.

Current investigation of DUP has illustrated that the person generally receive treatment within six months of symptom onset, others remain not taking treatment in the community for the period of 1-2 years (Skeate 2001); (Ho2003)

The 1st stage of help-seeking behavior--- "the decision to take treatment"---is critical factor prone to delay {McGorry et al (1996)} and may be dreadfully influenced by intrapersonal factors like coping style and pessimistic beliefs related to heath services.

The duration between the onset of illness to the initiation of adequate treatment was often many years even if we calculate the time from the point at which the person satisfy the diagnostic criteria for SZ and not from the starting of the prodromal phase (Larsen et al 1996). Because most of our efforts should be early identify the case and treat the person in the prodromal phase itself. We need to identify further which factors best indicate a upcoming schizophrenic symptoms among prodromal subjects (McGorry et al, 1996)

McGorry et al. (1996,) emphasized that studying different stages of the psychotic process more separately with respect to clinical picture with consideration of biological, psychological, and social factors and therapeutic interventions will significantly influence and modify the treatment seeking behavior.

In general treatment seeking behavior is influenced by several factors relating to sociodemographic profile, individual personality, availability of health services and family support. DUP is one of the way of measuring treatment-seeking behavior in schizophrenia. An effort to reduce DUP should be focused on detailed evaluation of which factors strongly influence the DUP and indentification of modifiable factors. These factors may be different in the prodrom and the early manifestation of psychotic symptoms. So this phases should be explored separately.

Larson et al (1996) McGorry et al (1996) strongly support early findings showing that there is a marked variation in DUP and therefore much to gain in secondary prevention if we can reduce the DUP. The Larsen et al (study 1996) found that females had a significantly lower DUP than males (39 weeks Vs 154 weeks).

Age at onset of illness and age at seeking treatment do not seem to have any definite relationship to DUP (Vaglum et al 1996, Larsen 1998). The important of socioeconomic class or ethnicity in relation to DUP is still unknown. Since schizophrenia most often occurs in younger and in low SES groups. Programs for early detection and intervention should focus on adolescents and be available in low SES groups.

The study by Larsen et al.(1996 7 1998) found that long DUP was related to poor social functioning, insidious onset of illness and presence of negative symptoms. DUP was positively correlated with severity of symptoms and measured by negative score of PANNS scale. Higher the negative score more strongly related to duration of untreated illness.

McGorry et al (1996) found that certain positive symptoms like persecutory ideas and related auditory hallucinations may markedly delay the treatment – seeking and increase the duration of untreated psychosis.

Loebel et al, 1992 found that the duration of untreated psychosis had been associated with slower the recovery process, increased

incidence of relapse, and many patient shows treatment resistance. Given what is known about the 'critical period' and the risk of delayed treatment, early intervention can be seen as crucial for positive outcomes.

Although the reasons for the treatment delay remain unclear, its implications for service delivery and outcome are increasingly being recognized (HO 2003). Based on the pioneering work of McGorry (1996), programs dedicated to detecting patients at the prodromal stage of the disorder and reducing treatment delays have shown much promise. However, currently available methods of screening for schizophrenia still have moderately high false positive rates.

Although many patients with schizophrenia delay treatment, they consume a disproportionate share of general medical and psychiatric services (Ho 2003).

IMPORTANCE OF EARLY DETECTION

There is a strong evidence of association between the delay in initiation of treatment and long term outcome of schizophrenia (Loebel et al 1992). Outcome is measured in the form of range of recovery risk of relapse, and treatment resistance. Increased duration of untreated psychosis is associated with delay in recovery and increased rate of relapse.

Early deterioration in schizophrenia can isolate the person from the family and friends, social networks and vocational activities.

For families who often can not understand correctly what is occurring a great deal of distress results. Family conflicts which exacerbate stress at home and negatively impact on the individual experiencing illness. Delayed treatment is more likely to be associated with judicial intervention and involuntary admission to psychiatric hospital established to deal with chronically suffering individuals. These aspects of management are more obviously traumatic for the individual and their family. Other types of secondary effects include, social anxiety, depression, substance dependence and homelessness.

Valgum el al, 1996 raised the several questions in relation to early detection of illness and consequences of early management of the disease.

1) Which psychosocial factors precipitate the prodrome of the illness.

2) Which psychosocial factors will lead the development of disorder from prodromal phase

3) Is there any specific signs of schizophrenia in prodromal phase.

4) What are the most important personality factors, family factors, and health service factors that influence the disease behavior and DUP

5) What are all the benefits to the individuals, the family, and society of a treatment instituted in the prodromal phase?

This investigations are however, methodologically as well as administratively more complicated, requiring close collaboration with relatively extensive special service organizations and qualified investigators. The work must be continued over a long period of time, and a combination of studies on clinical as well as general population may be necessary. These studies will therefore need firm and long-term support from government and local health authorizes if they are to reach their goals

CONCEPT OF PREVENTION IN SCHIZOPHRENIA

The notion of prevention of schizophrenia has a long yet tenuous pedigree. Kraeplin and Bleuler, observing the scene in pre-neuroleptic era, where heavily and understandably influenced by the devastation wrought by the unchecked erosive force of the disorders they witnessed, Kraeplin in particular, at least initially, through his concepts and classification, became the architect of an entrenched pessimism which continues to exert its influence yet even he hints at some preventive implication of early diagnosis.

Sullivan also observed decades ago “The psychiatrist sees too many end states and deals professionally with too few of the pre-

psychotic". This is undoubtedly true of a range of mental disorders not merely the psychoses, nevertheless, the surprisingly prolonged delays in treatment for concentration of those patients with the most persistent and disabling forms of illness in services mean that the sensitivity of the average clinician to the issues and preventive possibilities surrounding the onset phase of illness are severely blunted.

The best hopes new for the prevention of schizophrenia lies with indicated preventive interventions targeted at individuals manifesting precursor signs and symptoms who have not yet met the full criteria for diagnosis. The identification of individuals at this early stage, coupled with the introduction of pharmacological and psychosocial interventions, may prevent the development of the full blown disorder (McGorry 1996).

AIM OF THE STUDY

The aim of the study is to compare the occurrence of life events in schizophrenia with controls in one year before the onset of illness and to assess the premorbid function of individuals and correlation with age and sex

OBJECTIVES

1. To study the effects of life events in the year preceding the onset of disease
2. To assess the socio demographic profile of the patients presenting for the first time with schizophrenia
3. To study the premorbid personality of the patient presenting for the first time with schizophrenia
4. To study the premorbid adjustment of the patient
5. To study the duration of untreated illness among rural and urban population

METHODOLOGY

To satisfy these aim and objectives, the research design was planned based on hypothesis testing design with the use of validated structured tools and statistics. With in the universe of population, patients who satisfy the inclusion criteria were chosen.

The following NULL HYPOTHESIS were formed

1. Number of life events experienced one year before the onset of illness is not more in schizophrenics than in controls
2. Schizophrenics also not experience high levels of stressful life events as per life events score than controls in terms of severity.
3. Majority of schizophrenics have not poor premorbid functions than controls.
4. Majority of schizophrenics have not more premorbid schizoid and schizotypal traits than controls
5. The duration of untreated illness not more for rural than urban population.

INCLUSION CRITERIA

1. Persons diagnosed as schizophrenia according to ICD 10
2. Person presenting for the first time to outpatient department

3. Persons having reliable attendants from whom information can be gathered about the patients

EXCLUSION CRITERIA

1. Patients with acute psychosis, delusional disorder
2. Patient with mental retardation other comorbid cognitive disturbance
3. Patients with cannabis use or other substance intake
4. Previous episodes of psychiatric illness
5. Patient without reliable informants

The following tools were used for the evaluation of patient:

1. Proforma
2. International classification of mental and behavioral disorders (ICD-10) diagnostic criteria for schizophrenia.
3. socioeconomic status scale (kuppuswamy's SES scale,revised on 2012)
4. presumptive stressful life events scale (gurmeet sing et al 1984)
5. premorbid adjustment scale (cannon spoor et al 1982)
6. positive and negative syndrome scale (Stanley Kay et al 1987)
7. premorbid schizoid and schizotypal assessment scale (foerster et al 1991)
8. Global assessment functioning scale

STUDY DESIGN

The study was a case control study. The study was conducted in institute mental health, madras medical college, Chennai. The patients attending the psychiatry outpatient department were selected. The study period was from 1st may to august 2015.

The consecutive patient attending first time in outpatient department and satisfying the inclusion criteria were selected for study. The total sixty patient were selected as cases

The controls were taken up from general population. Age, sex, and socio economic status were matched. Controls were verified not suffering from any psychiatric illness.

Both cases controls and their attendants were explained about the nature of the study and were motivated to participate in the study after getting informed consent

For cases, the ICD-10 diagnostic criteria were applied and those fulfilling the criteria were included in the study. Details of socio demographic profile were collected and detailed history was taken from patient and attendants. Thorough neurological and physiological examinations were done. The life events in the presumptive stressful life events scale in the subject's life in the one year preceding the onset of

illness was assessed. The scores for positive and negative symptoms were made from PANSS scale. The premorbid functions were assessed using premorbid adjustment scale (PAS). The overall functions were assessed using global assessment functioning scale (GAf). The premorbid traits were assessed using premorbid schizoid and schizotypal scale.

The controls were taken as far as possible from the same sex and similar age group after taking the details of the socio demographic aspects, the life events in the subject's life on the preceding year was assessed. Then his premorbid function and traits were assessed using the same scale as applied in cases (PAS, GAF and PSST).

STATISTICAL ANALYSIS

The results were analyzed by using both qualitative and quantitative data. Data analysis was done using 'SPSS-22' statistical software.

1) Proforma

The proforma includes socio demographic details, history and duration of present illness, treatments under taken, family history, duration untreated illness, comorbidity, life events details, PANSS, PAS, and PSST score.

2) ICD -10 diagnostic criteria for schizophrenia- international classification of mental and behavioural disorders- diagnostic and clinical guidelinesWHO(1992)

The ICD-10 diagnostic criteria contains four items out of which if anyone is present for more than one month period, the diagnosis of schizophrenia can be made. They include thought-echo, thought insertion, thought withdrawal, or broadcasting, primary delusion, delusion of control, delusion of influence, delusion of passivity, second person or third person auditory hallucination. The other four items include other hallucination and delusion. Catatonic behaviour, negative symptoms, and formal thought disorders out of which atleast two must be present for a period of one month.

3) Socio economic status scale (kuppuswamy's SES scale,revised on 2012)

It consists of scores on three variables (education, occupation, & income). The three variables are clearly defined and appropriate score maintained. The total score was obtained by adding the three variables. According to the score, the group was divided into upper, middle and lower groups.

4) Presumptive life events scale developed by gurmeet singh et al, 1984

PSLES is a scale of stressful life events designed for use in Indian population. The scale was revised based on holmes & rahe's Social Readjustment Rating Schedule (SRRS) because many item in the SRRS were found to be not applicable to Indian population.

The scale consists of 51 items, which are arranged, in ascending order of severity. Each event is given a mean stress score that various from 20 to 95. The events may further be divided into desirable, undesirable and ambiguous, personal and impersonal. The scale may be administered for two time spaces, i.e., recent one year and life time. More than 2 life events in the past one year and more than 10 times in the life time are significant. In our study we considered the life events in the past one year before the onset of illness. Also Number of life events and total score of life events are measured by using this scale.

5) Positive and negative syndrome scale (Stanley Kay et al,1987)

PANSS scale is used to measure the severity of symptoms of schizophrenia. It measures the symptoms in three dimensions such as positive and negative and general psychopathology. Positive and negative symptom each has seven items. General psychopathology has sixteen

items. Each item has score between0 to 6. Zero indicates absent symptoms and six indicates extreme severity of symptoms

6) Premorbid adjustment scale (PAS) cannon spoor et al (1982)

Premorbid adjustment scale is rating scale which used to evaluate the premorbid functions of the individual before the onset of illness. The scale assess the function of individual in five major domains such as sociability and social withdrawal, peer group interactions, academic performance and sexual attitude of individual. The scale measures four life period such as childhood period up to eleven years, early adolescent period from eleven years to fifteen years, late adolescent period from 12 years to 15 years and late adulthood 19 years and above.

The PAS is administered to the individual life periods one year before the onset of illness. If patient is 15 years old, we have to cover the life period of childhood and early adolescent. If patient is 20 years old we have to cover the all four life periods. Each period has five domains as mentioned earlier but childhood period does not contain sexual domain. In addition to that, general question also included in this scale which measure overall functioning of individual.

Each item in this section will be scored ranging from 0-6, 0 denoting hypothetically the healthiest and 6 the least healthy end.

Scoring : The rating received for each item in a section are summed and divided by possible score. It will give the score in decimal.

7) Global assessment of functioning scale (GAF)

The global assessment of functioning scale is used to measure the overall functioning of individual. The scale was developed in 1990. It is based on DSM four criteria. This is 100 point scale. It gives detailed description every 10 point interval. The highest point is superior level of functioning. As the score decreases the level of functioning also will be decreased.

8) Assessment of premorbid schizoid and schizotypal traits(PSST)

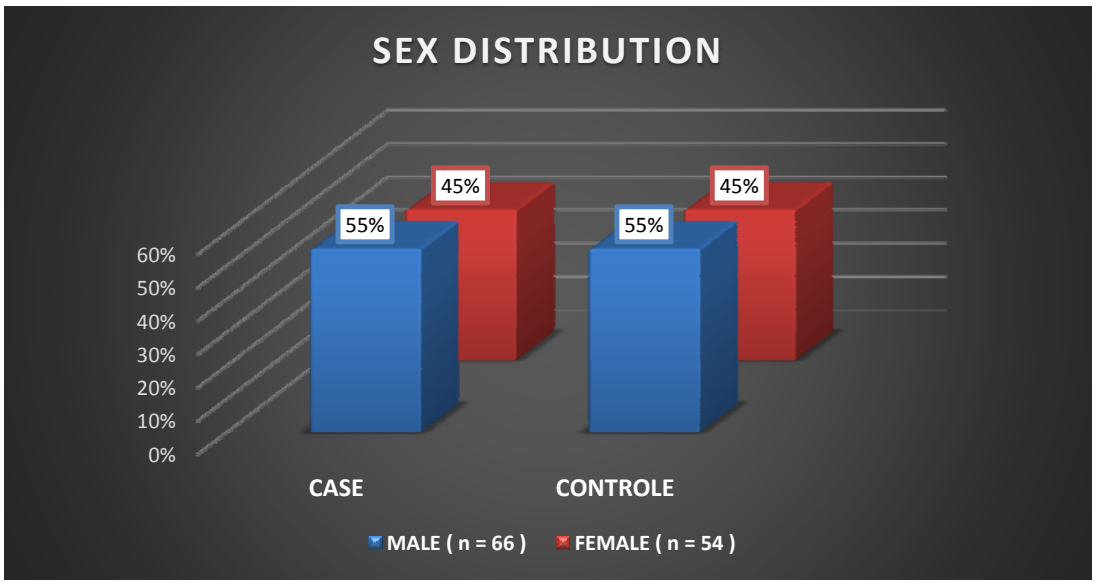
This is an interview to cover areas of longstanding premorbid dysfunction relevant to current concepts of schizoid and schizotypal disorders. Seven items were scored for the period between ages of 5 to 16 year, and rated on a four point scale. The items addressed sociability, demonstrative affect, suspiciousness, sensitivity, socialized and unsocialized anti social behavior. Each item scores from 1 to 3.

RESULTS AND INTERPRETATIONS

TABLLE NO.1

TABLE SHOWING SOCIO DEMOGRAPHIC VARIABLES BETWEEN CASE AND CONTROLS

		CASES	CONTROLS
SEX	MALE	33	33
		55.0%	55.0%
	FEMALE	27	27
		45.0%	45.0%
Total		60	60
		100.0%	100.0%

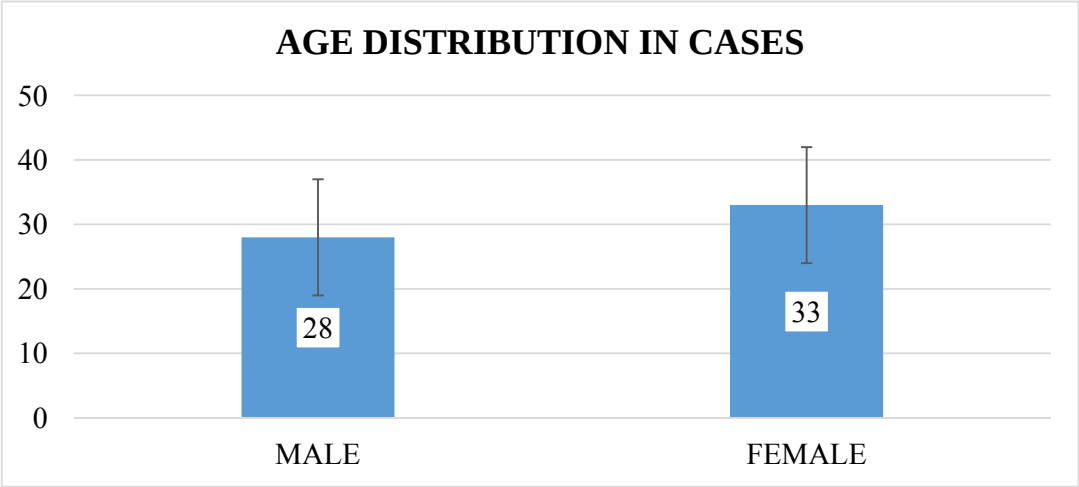


The above tables showing number of males and females and Age matched controls

TABLE NO. 2

SHOWING AGE OF PRESENTATIONS IN DIFFERENT SEX

	MALES	FEMALES
MEAN	28 .27	33.11
S.D	8.93	9.31
NUMBER	33	27



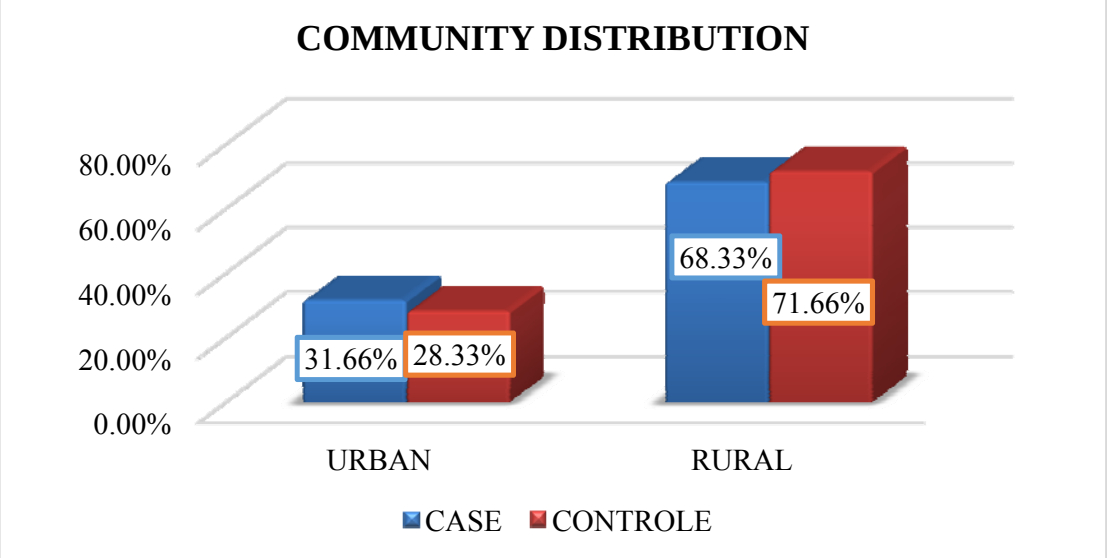
The difference between the age of onset for males and females if about five year.

TABLE No. 3

SHOWING COMMUNITY DISTRIBUTION OF

CASE AND CONTROL

			GROUP	
			CASE	CONTROL
RURAL /URBAN	URBAN		19 31.66%	17 28.33%
	RURAL		41 68.33%	43 71.66%
Total		Count	60 100%	60 100%

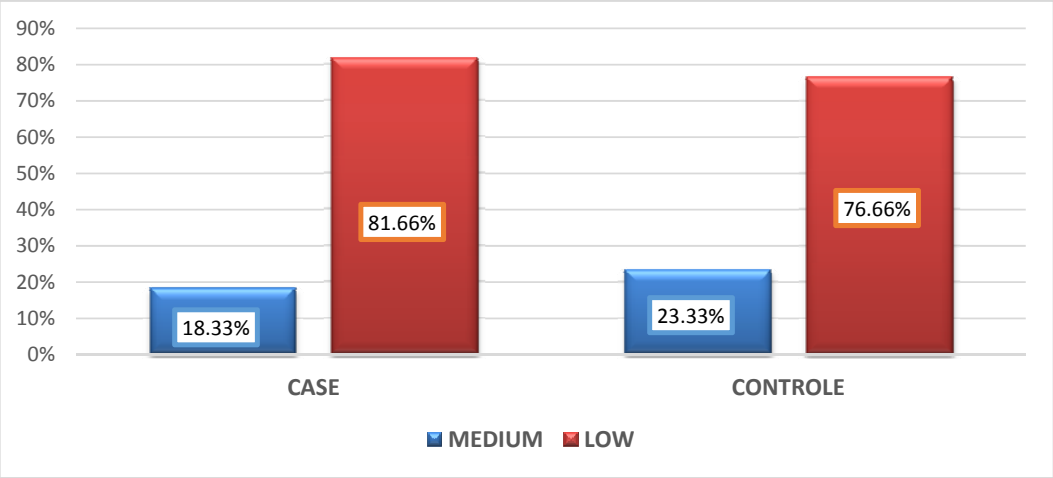


Majority of patient belongs to rural area.

TABLE NO.4

SHOWING SOCIO ECNOMIC STATUS VARIABLES

SES	GROUP		Total
	CASE	CONTROL	
MEDIUM (includes upper middle)	11 18.33%	14 23.33%	25
LOW (includes upper lower)	49 81.66%	46 76.66%	95
Total	60 100.0%	60 100.0%	120



In our study shows that cases are more belongs to low socio economic status which is due to the fact that the services of the hospital are utilized by mainly poor rural people

TABLE NO 5.

SHOWING MARITAL STATUS OF CASES AND CONTROLS

		GROUP		
		CASE	CONTROL	Total
MARRIETAL STATUS	UNMARRID	26 43.33%	20 33.33%	46 38.33%
	MARRIED	34 56.66%	40 66.66%	74 61.16%
Total		60 100.0%	60 100.0%	120 100.0%

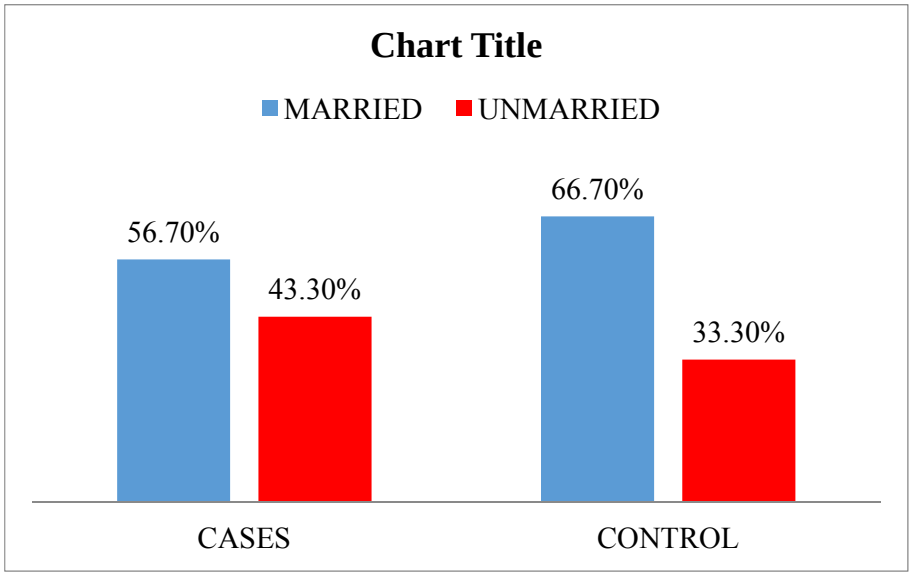
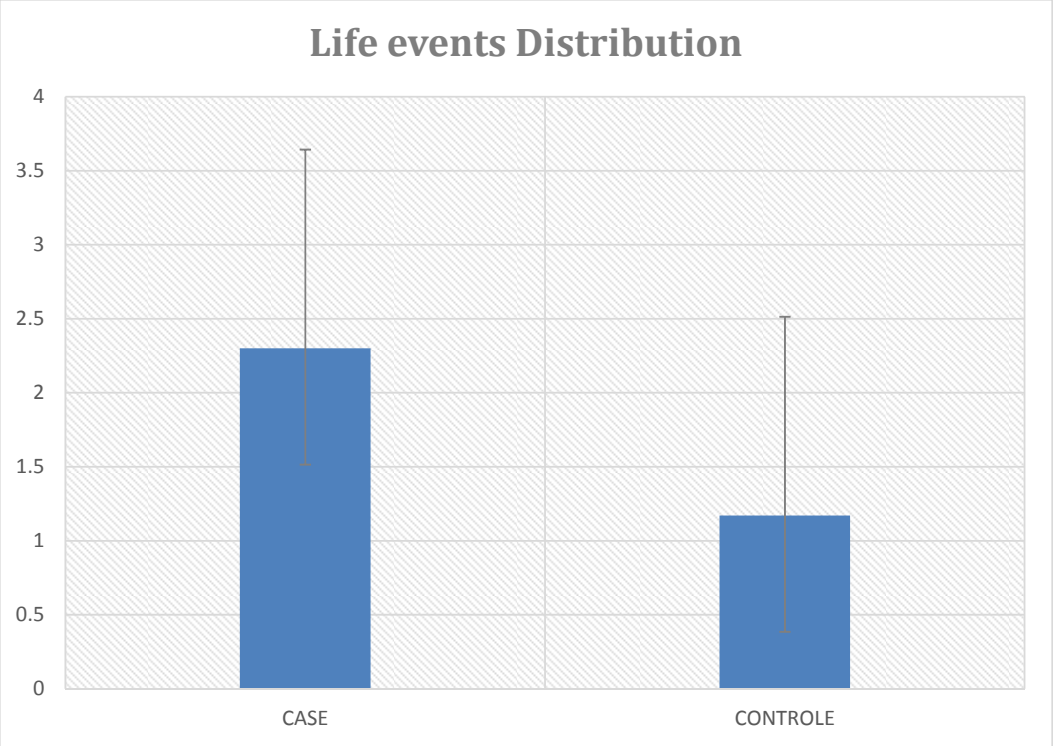


Table no 5 shows the marital status of cases and controls. 34 schizophrenic patients are married and 26 schizophrenic patients are unmarried.

TABLE 6 : SHOWING TOTAL NUMBER OF LIFE EVENTS BETWEEN CASES AND CONTROLS

Group Statistics							
	GROUP	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**	**T Value**	**p Value**
NO OF LIFE EVENTS	CASE	60	2.30	1.344	.174	5.640	<0.001
	CONTROLE	60	1.17	.785	.101		



The score obtained in case is higher than controls and statistically significant and p value less than 0.01.

TABLENO.7 :

SHOWING DIFFFERENCES IN CASES AND CONTROLS WITH RESPECT TO THREE EVENTS AND ABOVE

		GROUP		Total
		CASE	CONTROL	
NO OF LIFE EVENTS	UPTO 2	38 39.6%	58 60.4%	96 100.0%
	≥ 3	22 91.7%	2 8.3%	24 100.0%
Total		60 50.0%	60 50.0%	120 100.0%

	Value	df	p VALUE
Pearson Chi-Square	20.833	1	< 0.001

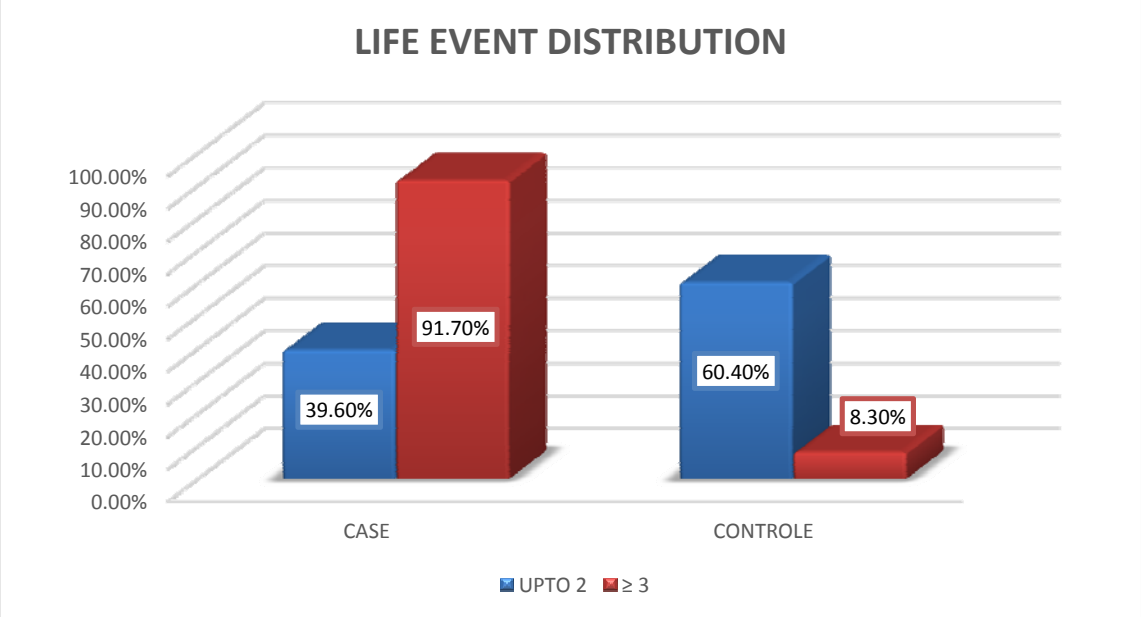
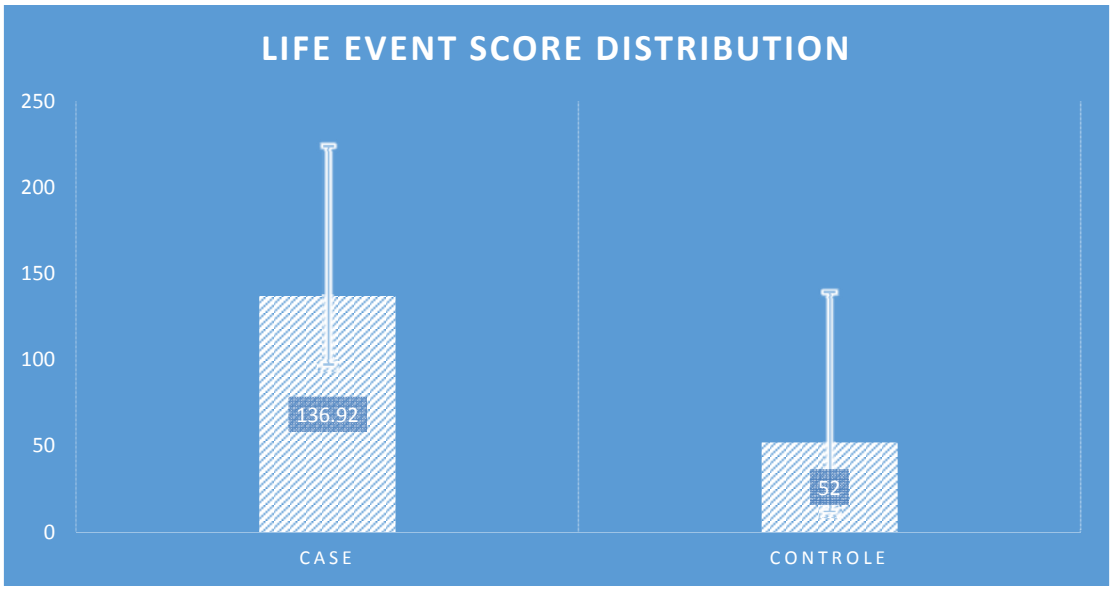


TABLE NO.8

SHOWING LIFE EVENTS SCORE BETWEEN CASES AND CONTROLS

Group Statistics							
	GROUP	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**	**T Value**	**p Value**
LIFE EVENTS SCORE	CASE	60	136.92	86.745	11.199	6.873	<0.001
	CONTROL	60	52.00	40.437	5.220		

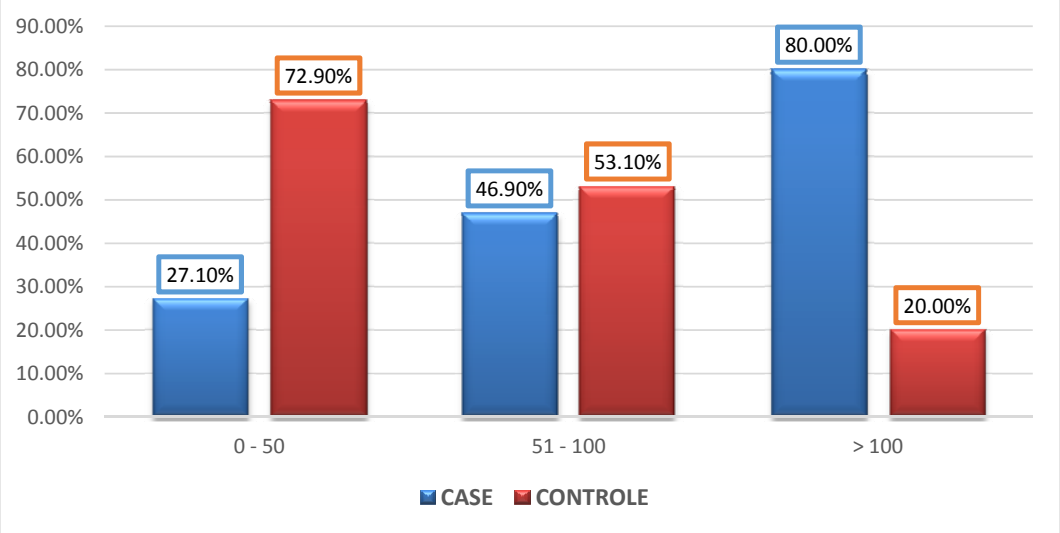


The average life events score obtained is high in cases than controls . This is statistically significant.

TABLE NO 9 :

SHOWING THE DISTRIBUTION OF LIFE EVENTS SCORE

SCORE	CASES	CONTROLS	TOTAL
0-50	13	35	48
50- 100	15	17	32
>100	32	8	40



Chi-Square Tests

	Value	df	p VALUE
Pearson Chi-Square	24.608	2	<0.001

Majority of the cases fall in the group of a score 100 and above whereas in controls it is fall below fifty and statistically significant.

TABLE NO 10 :

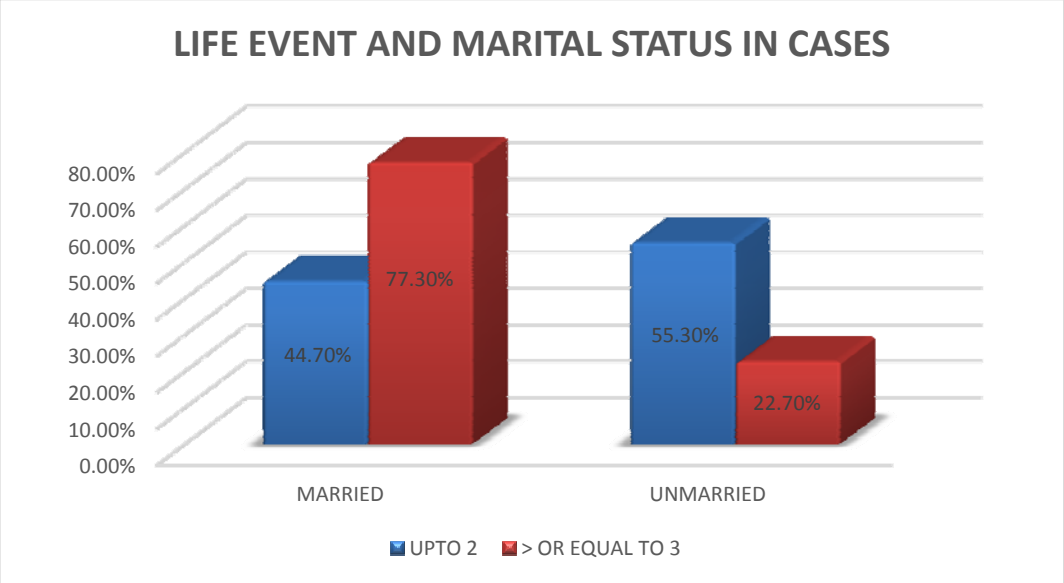
SHOWING NUMBER OF LIFE EVENTS IN MARRIED AND UNMARRIED GROUP IN CASES AND CONTROLS

		GROUP						
		CASE				**CONTROL**		
		SEX				**SEX**		
		FEMALE		**MALE**		**FEMALE**		**MALE**
		MARRIED	UNMARRIED	MARRIED	UNMARRIED	MARRIED	UNMARRIED	MARRIED
NO OF LIFE EVENTS	0	0	0	0	1	4	1	5
	1	12	2	0	6	11	1	9
	2	5	3	0	9	8	2	3
	3	3	0	3	4	0	0	0
	4	1	0	5	0	0	0	0
	5	1	0	4	1	0	0	0

Among the all group married males in cases have experienced three and more than three life events

TABLE NO 11 SHOWING COMPARISON LIFE EVENTS AND MARITAL STATUS IN CASES (INCLUDES MALE AND FEMALES)

			MARRIETAL STATUS		Total
			MARRIED	UNMARRIED	
NO OF LIFE EVENTS	UPTO 2	Count	17	21	38
		% within NO OF LIFE EVENTS	44.7%	55.3%	100.0%
	> OR EQUAL TO 3	Count	17	5	22
		% within NO OF LIFE EVENTS	77.3%	22.7%	100.0%
Total		Count	34	26	60
		% within NO OF LIFE EVENTS	56.7%	43.3%	100.0%

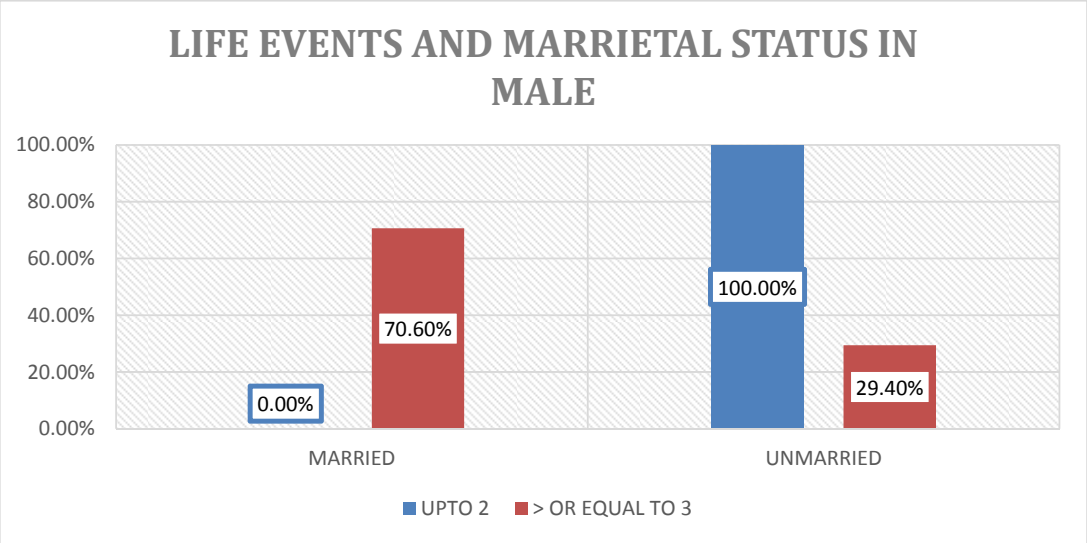


Pearson Chi-Square	Value 6.007	df 1	p Value 0.014

The above table (table no 10) is showing statistically significant difference between married and unmarried persons in cases. Married persons have experienced higher number of life events.

TABLE 12 : SHOWING NUMBER OF LIFE EVENTS AND MARITAL STATUS IN MALE CASES

NO. OF LIFE EVENTS	MARRIED MALE	UNMRRIED MALE
UP TO 2	0	16
3 AND MORE	12	5

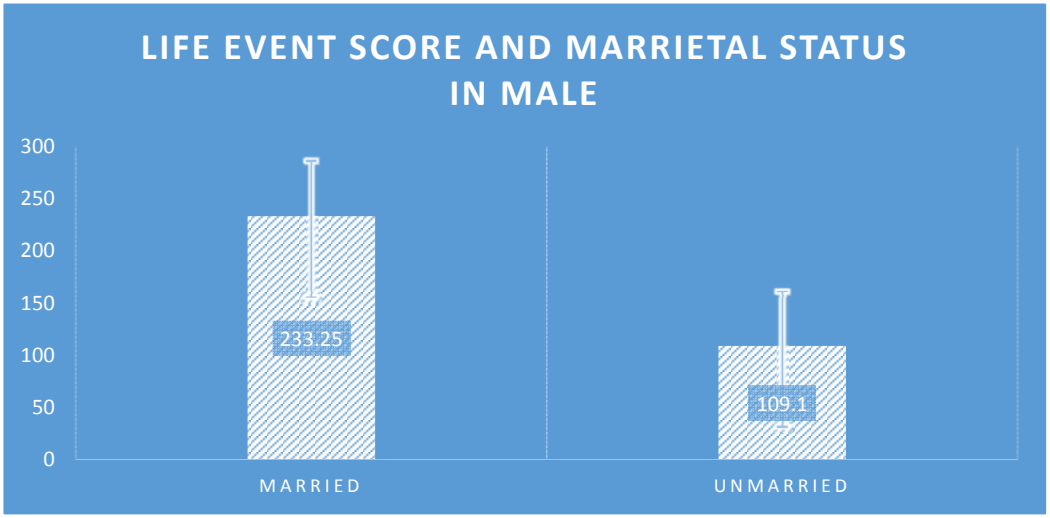


pearson Chi-Square	Value 17.748	Df 1	p Value < 0.001

There is statistically significant difference between male married unmarried male cases. Married male schizophrenics have experienced higher number of life events compared to unmarried male schizophrenics patient

TABLE 13 : SHOWING COMPARISION OF LIFE EVENTS SCORE WITH MARITAL STATUS IN MALE CASES

Group Statistics							
	MARRIETAL STATUS	N	Mean	Std. Deviation	Std. Error Mean	T Value	p Value
LIFE EVENTS SCORE	MARRIED	12	233.25	52.194	15.067	4.897	<0.001
	UNMARRIED	21	109.10	78.167	17.057		
SEX = MALE							



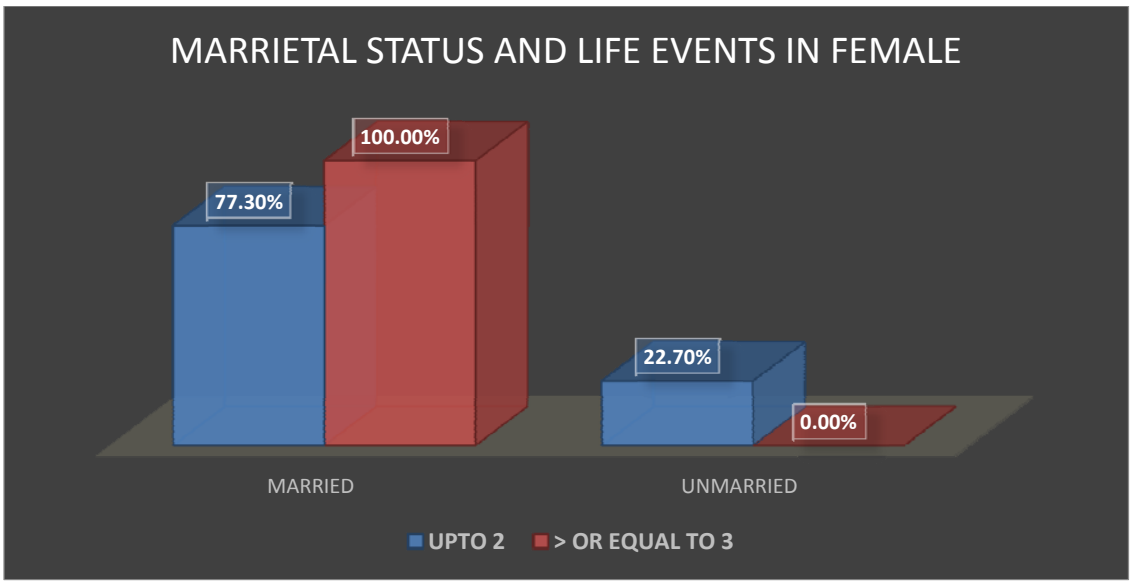
There is a statistically significant score between married and unmarried male schizophrenics

TABLE NO 14.

SHOWING NO OF LIFE EVENTS AND MARITAL STATUS IN FEMALE CASES

NO. OF LIFE EVENTS	MARRIED FEMALE	UNMRRIED FEMALE
UP TO 2	17	5
3 AND MORE	5	0

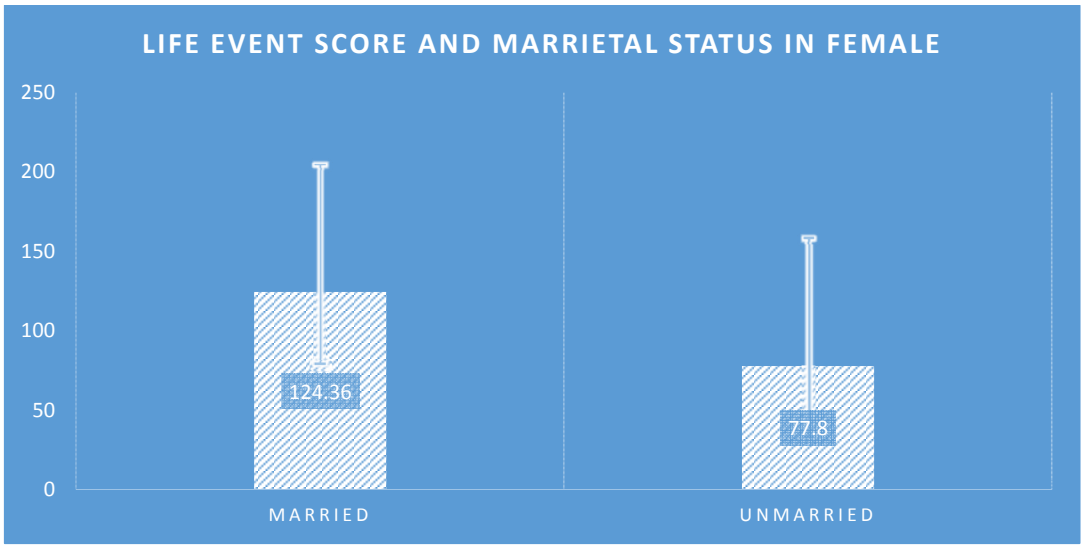
Pearson Chi-Square	VALUE 1.395	DF 1	P VALUE 0.238



No statistically significant difference between female cases with respect to marital status

TABLE NO 15 : COPARISION OF LIFE EVETS SCORE AND FEMALE MARITAL STATUS IN CASES

Group Statistics							
	MARRIETL STATUS	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**	**T Value**	**p Value**
LIFE EVENTS SCORE	MARRIED	22	124.36	80.209	17.101	1.242	0.246
	UNMARRIED	5	77.80	45.080	20.160		
a. SEX = FEMALE							



There is no statistically significant difference between female cases with respect to marital status

TABLE NO 16 : SHOWING COMPARISON BETWEEN LIFE EVENTS AND MARITAL STATUS IN CONTROLS (GENERAL POPULATION)

NO OF LIFE EVENTS AND MARRIETAL STATUS				
		MARRIETAL STATUS		**Total**
		MARRIED	**UNMARRIED**	
NO OF LIFE EVENTS	UPTO 2	40	18	58
	> OR EQUAL TO 3	0	2	2
Total		40	20	60

	Value	df	p VALUE
Pearson Chi-Square	4.138[a]	1	0.042

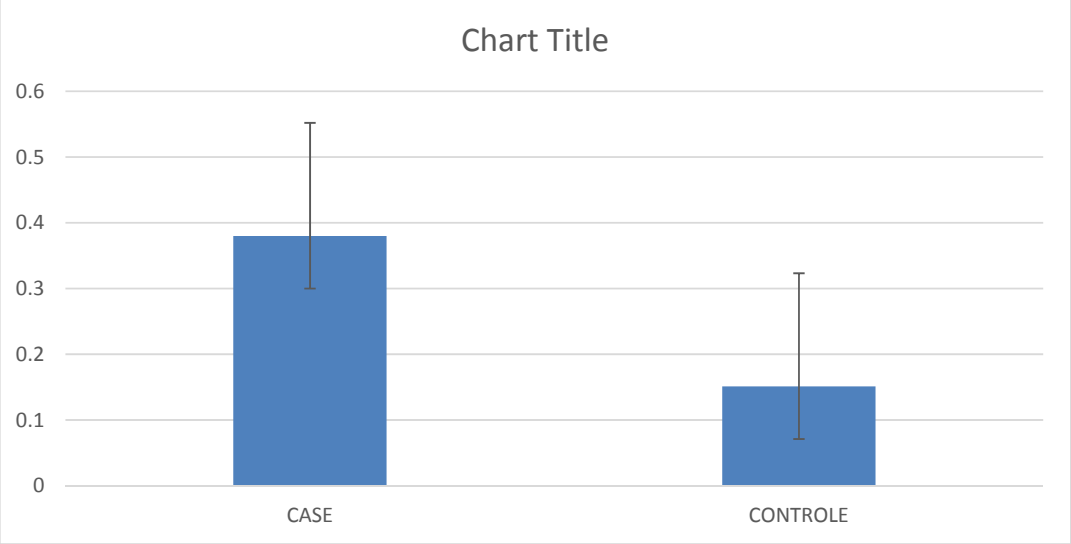
The above table (table no 16) is showing No statistically significant difference between married and unmarried persons in controls in relation to life events

TABLE NO.17 :

COMPARISION OF PREMORBID

FUNCTIONS OF CASES AND CONTROLS

PREMORBID ADJUSTMENT SCALE (PAS)						
GROUP	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**	**T Value**	**p Value**
CASE	60	.3800	.17220	.02223	9.339	<0.001
CONTROL	60	.1512	.07981	.01030		

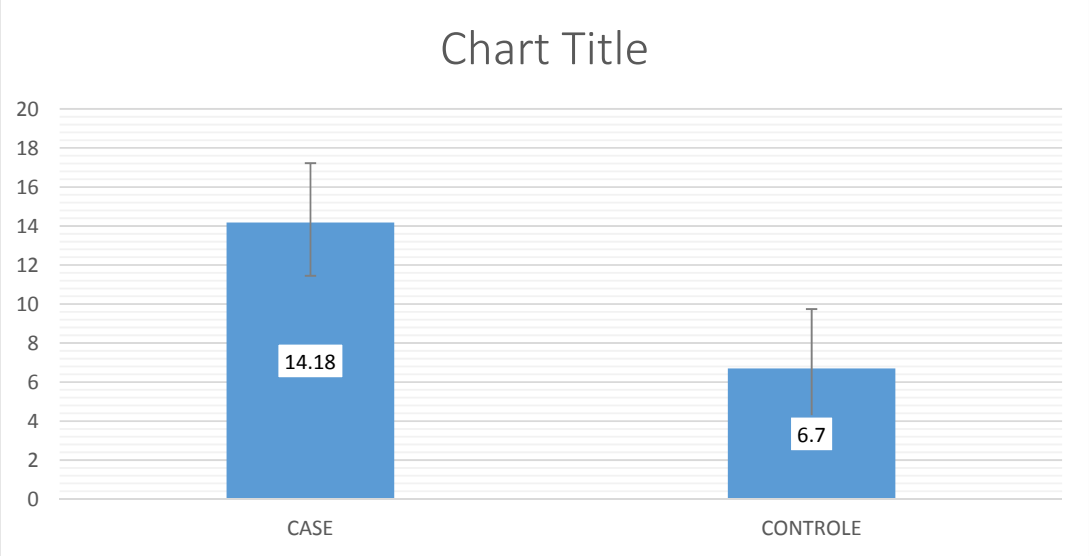


The difference between cases and controls are statistically significant. Cases are having poor premorbid functions than controls

TABLE NO 18 :

COMPARISION OF PREMORBID SCHIZOID AND SCHIZOTYPAL TRAITS (PSST)

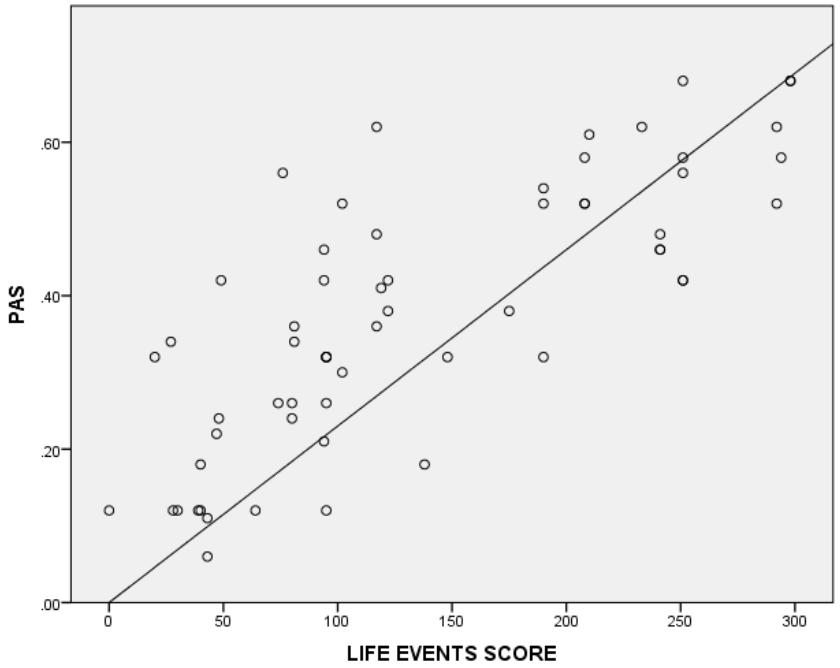
	GROUP	N	Mean	Std. Deviation	Std. Error Mean	T Value	p Value
PSST	CASE	60	14.18	3.050	.394	14.168	<0.001
	CONTROL	60	6.70	2.727	.352		



There is statistically significant difference between cases and controls

TABLE NO 19 CORRELATION BETWEEN LIFE EVENTS SCORE AND PREMORBID ADJUSTMENT SCALE

Correlations			
		LIFE EVENTSSCORE	PAS
LIFE EVENTSSCORE	Pearson Correlation	1	.781**
	p Value		<0.001
	N	60	60
PAS	Pearson Correlation	.781**	1
	p Value	<0.001	
	N	60	60
**. Correlation is significant at the 0.01 level (2-tailed).			



There is positive correlation between life events score and pas scale. That indicate increase life events score have associated with poor level of premorbid function

TABLE NO 20

SHOWING CORERELATION BETWEEN

LIFE EVENTS SCORE AND GAF

Correlations

		LIFE EVENTS	GAF
LIFE EVENTS	Pearson Correlation	1	-.762**
	P value		<0.001
	N	60	60
GAF	Pearson Correlation	-.762**	1
	P value	<0.001	
	N	60	60

**. Correlation is significant at the 0.01 level (2-tailed).

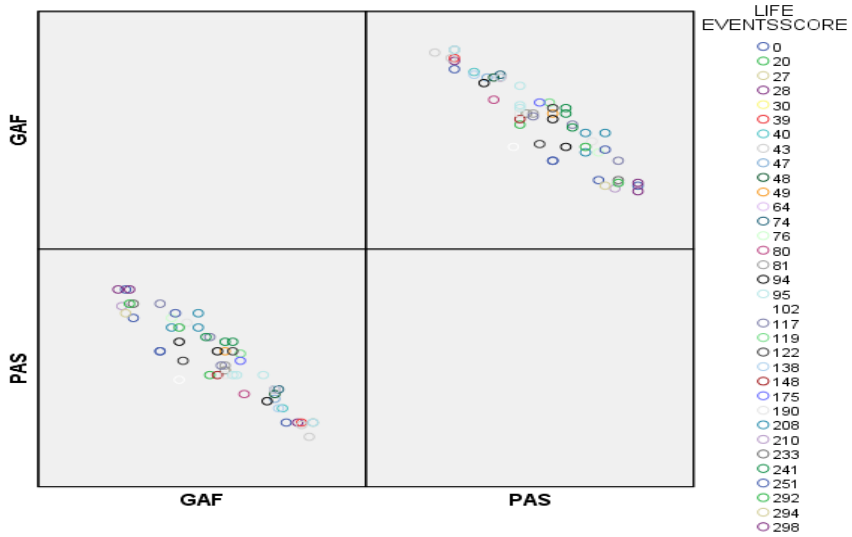


Table shows negative correlation between the life events score and global assessment functioning scale.

TABLE NO 21 :

SHOWING RURAL / URBAN DIFFERENCE IN

DURATION OF UNTREATED ILLNESS

	DUP
URBAN	13.6
RURAL	15.9

TABLE NO 22 : D.U.P IN GENDER DIFFERENCE

	DUP
FEMALES	15.92
MALES	14.48

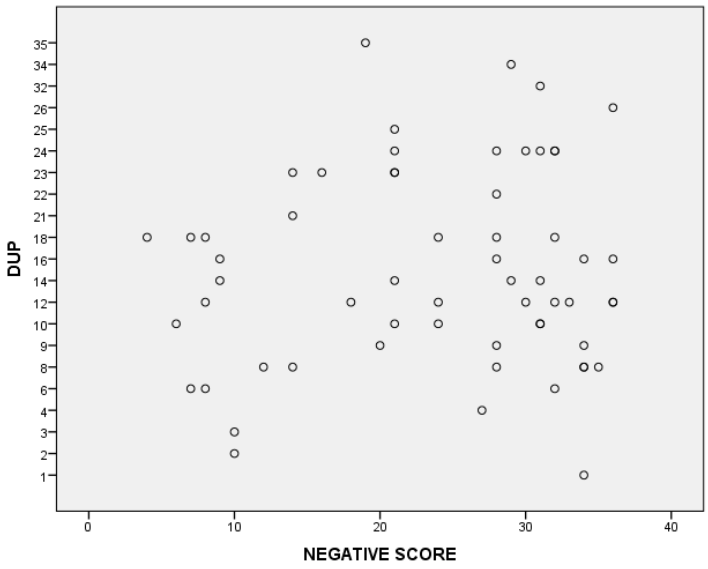
TABLE NO 23 : D.U.P AND POSITIVE FAMILY HISTORY

FAMILY H/O PSYCHOSIS	DUP
POSITIVE	12.13
NEGATIVE	17.93

TABLE 24

SHOWING CORRELATION BETWEEN D.U.P AND NAGATIVE SYMPTOMS

Correlations			
		DUP	NEGATIVE SCORE
DUP	Pearson Correlation	1	.082
	p Value		.534
	N	60	60
NEGATIVE SCORE	Pearson Correlation	.082	1
	p Value	.534	
	N	60	60



From the above table there is no correlation between DUP and severity of disease

DISCUSSION

The study aimed to study the effects of psychosocial stress at the onset of schizophrenia and also the psychosocial factors that affect the presentation of cases to the health care available. Thus the study also intends to know the duration of untreated illness and its correlations with psychosocial and clinical features.

The study was done at the psychiatry outpatient department at institute of mental health, Madras medical college and the patient attending first time for seeking health care. They are drug naive patient. Sixty consecutive cases of schizophrenia were included in the study based on the inclusion criteria. Age and sex matched controls were taken from the general population.

Table 1 shows the socio demographic profile of the cases and controls. The total number of cases were 60 and the same number of controls were taken. Number of males in the cases group were 33 and same number of controls were included. Similarly 27 female cases were present and same number of controls were included.

The mean age of the cases and controls were similar. The number of males and females are equal in both cases and controls group. Hence the study was age and sex matched.

The mean age of schizophrenics at the time of presentation is 30.33 years in this study. This is well known fact that schizophrenia starts at second and third decade (jablensky 2000). But the value is higher than ho 2003 24.1years.

The number of male patients is 33 and that of female is 27. The male and female ratio is nearly equal. Studies that do not separate groups by age of onset show a male female ratio of close to 1 (norquist and narrow 1997)

Table 2 shows that there is a statistically significant difference in the age of presentation between males and females. Mean age of presentation of males were 28.27 and females were 33.11. This values are higher than some of reviews on this subject {(Ho 2003) males 21.4years and females 26.8 years}. The difference in the age of presentation between males and females is about five years which is similar to the finding of Ho 2003 5.4 years and hafner 1989, 5-6 years and mayer 1993 4-5 years. Loranger 1984 (2.2years)

Majority of males were in the age group of 15-20 years.(not shown in table) . Majority of females were in the age group of 30 -35 years. (not shown in table). About 60 % of male patients belong to the age less than 30 years while only 30% of females were under 30 years of age. In his study lewin et al says that majority of males got admitted

before age 26 and females after the age 26. According to loranger 1984 nine out of ten males compared with only two out of three females patients became schizophrenic before the age 30 years.

Table no 3 and 4 show the majority of patient belong to rural area and they are also in the lower class status which is due to the fact that the services of the hospital are utilized by mainly poor rural people. Hence the finding is due to the social profile of patients attending the hospital in general. But in general it is stated that schizophrenia belong to lower socio economic status due to downward drift hypothesis as well as the breeder hypothesis (jablensky 2000)

Table no 5 shows the marital status of cases and controls. 34 schizophrenic patients are married and 26 schizophrenic patients are unmarried.

Table no 6 shows that the mean number of life events experienced by the cases was 2.30 and that of controls was 1.70 and the finding was statistically significant. This is similar though slightly lower than the values of Schwartz and myes 1987 (the mean number of events experienced by schizophrenics is 3.25 versus 1.51 for controls). This finding also similar to the findings of Mondelli et al (2010), he finds the life events score for cases 2.3 and for controls 0.7. According to finding

of Chung (1986) for those patients with schizophrenia has experiencing three times more the life events than compared to normal control

According to al khani (1986) even though the patient group had experienced a high frequency of events they were not statistically significant. An increasing finding in gureje's 1988 is that controls experienced significantly more life events than cases. Such finding may be due to cultural difference between the developed countries.

Table no 7 shows that number of cases experiencing greater than three life events in the past one year was 22 compared to only 2 of the control. There was statistically significant number of life events experienced by the cases than controls. This is in accordance with some of the studies in the field. According to brown and birley(1968) Schizophrenics experienced more number of life events in the period of three weeks preceding the illness. Canton and fraccon (1985) reports that out of 54 cases and controls schizophrenics experienced more number of life events than controls. Chung (1989) also reports the same.

From table 8 it can be noted that the mean score of life event score is about 136.92 in cases whereas the score of the controls only about 52. These tables shows that cases experienced significantly high level of stress based on the life events score. This is in accordance with the canton and fraccon 1985 study (72% of patients experienced significantly high

severity on a scale from moderate to severe than did the normal distribution).

From table 9 it can be noted that about 32 cases reported life event score of more than 100 as only 8 controls reported similarly. This finding is statistically significant. This score shows the severity of life events experienced by cases is more compared to controls .

From table 10, 12 & 13 shows the relationship between the marital status and life events. From this it can be noted that male schizophrenic patient experiences three or more number of life events than females. Also severity of life events score is higher in male schizophrenia.

From table no 14 &15 show that there is no relationship between female married and unmarried schizophrenic patient. Life events has no impact on marital status of female patients

Table no 11 shows that over all married cases experienced higher number of life events in the preceding year compared to unmarried cases. Again when compared with controls married cases experienced more number of life events. This finding is not present in female cases.

This finding shows that marriage is a significant stress among male patients with schizophrenia. This similar to the study by kulhara 1998 (married groups reported higher stress and greater number of life events)

But this finding is in contrast with the study of alkhani 1988 which concludes that female married patients were the ones who experienced more number of life events. The difference in these studies may be due to the fact that the latter study was from Saudi Arabia and cultural factors may play a significant role in this aspect.

From tables 17 &18 it can be clearly stated that compared to controls the patient with schizophrenia shows more impairment in social functioning pre morbidly. They also shows significant schizoid and schizotypal traits compared with controls. This finding is similar to the studies of forester et al 1991 and dalkin et al1994. In forester et al study 1991 schizophrenics showed significant impairment in premorbid functioning. He also showed that males had more impairment than females. In a similar note dalkin also says that schizophrenics experienced more premorbid social dysfunction. But in this study though there was clearly significant difference between cases and controls. There was no significant difference between male and female cases (not shown in tables). This may be due to small sample size and the biased reporting of attendants.

Table no 19 shows a correlation table between life events score and premorbid adjustment scale. There is a positive correlation between the two. From this it can be noted that increasing life events score associated

with poor level of premorbid function. Table no 20 shows the negative correlation between life events score and global assessment functioning. If the patient experiences higher number of life events, associated with poor level of functioning. This may be due to the fact that generally schizophrenic patients have poor level of premorbid functioning before the onset of illness.

The duration of unteated illness was 15.13 months. The earliest was one month and the longest was 3 years. It shows that it takes nearly one year on an average for patients to the psychiatrist health care. This is even reported in western studies. According to Ho 2003 there is time lag of 1-2 years between the onset of the illness and initiation of treatment. Mcglashan 1999 also reports a similar time lag. In our study durations of untreated illness in urban is about 13.6 months that of rural area 15.9 months. There is a difference of about three months more in the rural population in obtaining psychiatric care which can be expected from their ignorance and unavailability of medical care.

Table 22 shows that the duration of untreated illness shows no difference between males and females. In our study the female D.U.P is 15 months and male is 14 months. This is contrary to the findings of Larsen (1996) about 6 months for females versus 13 months for males.

This may be due to cultural variations in our country which need further research

Table no 23 shows that there is a difference between duration of untreated illness among persons with positive history of mental illness and those without. Persons with family history of mental illness utilizes health care earlier

From table 24 It Can be noted that duration of untreated illness has no correlation with the severity of illness. This is in contrast with the study of addington (2004) who says that prolonged untreated period is associated with severe form of illness. The discrepancy may be due to the difference in sampling and also due to the fact approaching primary care in our country depends on lot of things like the faith and misbeleifs of the patient and his family members especially in the rural area. Hence even with severe illness the health care seeking behavior may be delayed. Also there may be facts such as unavailable of health care, inaccessibility due to transportation of patient which may be extremely difficult when he is violent.

SUMMARY

In summary it can be said that from this study some of the findings well known are confirmed. This includes the fact the onset is at about second and third decade of age. Males develop the disease at an earlier age than females.

Exposure to life events has been considered as a triggering factor in a vulnerable individual. In this study also schizophrenics experienced more life events before the onset of the illness. The severity of stress is also high in schizophrenic patient before the onset of illness. The schizophrenic patient also experiences more intrusive events compared to controls. This is more in case of married schizophrenics. The effects of stress on vulnerable persons need still further research.

Schizophrenics had more premorbid social dysfunctions and more schizoid and schizotypal traits than controls. This also points towards the biological nature of schizophrenia.

Duration of illness had no correlation between the severity of illness. Urban people and persons with positive family history of psychiatric illness approach health care earlier than those without it.

LIMITATION OF THE STUDY

1) It is a retrospective study

2) Sample size is small

3) The cases are mainly from low socio economic group making it difficult to assess the effect of stress on various groups.

4) Life events research is vulnerable to biases in recalling and over inclusion of unnecessary events.

5) Only schizophrenic were included in the study. Acute psychosis were not included who may be useful in assessment of stress.

6) Pre morbid scores may also be colored by the poor memory and bias of the informants.

FUTURE DIRECTION

The biological nature of schizophrenia cannot be disputed in this current era

But it cannot explain everything about it. The effects of stress like everyday life events may throw lights upon the interaction between stress and the individual which is the age old “nature vs nurture” theory.

Knowing that stress plays an important role can help us to plan interaction necessary to avoid precipitation of disease in a vulnerable individual

Knowing the premorbid characteristics can make us to plan towards identifying the patients at an prodromal period itself which needs further research.

The integrating biological and psychosocial factors are needed further research.

CONCLUSION

From this case control study of the recent onset schizophrenics the following conclusions were drawn

1) The schizophrenic patients experienced more number of life events than the controls in the year preceding the onset of the illness.

2) Schizophrenics also experience severe stress in the year preceding the onset of illness.

3) Married schizophrenics experience severe stress than other groups

4) Schizophrenia had more premorbid social dysfunction than controls

5) Schizophrenia had more schizoid and schizotypal traits than controls

6) The duration of untreated illness has no correlation with severity of the disease

7) The duration of untreated illness is less in urban people and those with positive family history of psychosis.

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APPENDIX

1) PROFORMA

Socio demographic data

Patient OP no:

Name:

Age:

Sex:

Education: 1.Graduate

2 Higher secondary

3. secondary

4. primary

Occupation:

1. Profession

2. bussiness

3. Semiskilled

4. Skilled

Marital Status:

1. unmarried

2. divorced

3.Single

Religion:

1.Hindu

2. Muslim

3. Christian

Family type:

1. Joint
2. Nuclear

Domicile 1.Urban
2. Rural

Informant Relationship

CLINICAL HISTORY

Total duration of illness:

Acute /subacute / insidious

Precipitating factors: present/absent

Past history of psychiatric illness:

Time taken for onset to treatment DUP :

Reason for delay in treatment:

Presenting complaints & history:

Past history ; mental illness/ physical illness

Family history; mental illness/ suicide/ alcohol dependence/seizure

Treatment history:

Childhood history:

Premorbid personality: schizoid / schizotypal traits/ others

Physical examination;

Neurological examination:

Mental status examination:

Higher mental status examination;

2) ICD- 10 DIAGNOSTIC CRITERIA FOR SCHIZOPHRENIA

This overall category includes the common varieties of schizophrenia, together with some less common varieties and closely related disorders. General criteria for paranoid, hebephrenic, catatonic, and undifferentiated schizophrenia.

G1. Either *at least one* of the syndromes, symptoms, and signs listed under (1) below, *or* at least two of the symptoms and signs listed under (2) should be present for most of the time during an episode of psychotic illness lasting for at least 1 month (or at some time during most of the days).

1. At least one of the following must be present:
   A. thought echo, thought insertion or withdrawal, or thought broadcasting;
   B. delusions of control, influence, or passivity, clearly referred to body or limb movements or specific thoughts, actions, or sensations; delusional perception;
   C. hallucinatory voices giving a running commentary on the patient's behavior, or discussing the patient among themselves, or other types of hallucinatory voices coming from some part of the body;
   D. persistent delusions of other kinds that are culturally inappropriate and completely impossible (e.g., being able to control the weather, or being in communication with aliens from another world).
2. *Or* at least two of the following:
   A. persistent hallucinations in any modality, when occurring every day for at least 1 month, when accompanied by delusions (which may be fleeting or half-formed) without clear affective content, or when accompanied by persistent overvalued ideas;
   B. neologisms, breaks, or interpolations in the train of thought, resulting in incoherence or irrelevant speech;
   C. catatonic behavior, such as excitement, posturing or waxy flexibility, negativism, mutism, and stupor;
   D. negative symptoms, such as marked apathy, paucity of speech, and blunting or incongruity of emotional responses (it must be clear that these are not due to depression or to neuroleptic medication).

G2. *Most commonly used exclusion clauses*

1. If the patient also meets criteria for manic episode or depressive episode, the criteria listed under G1(1) and GI(2) above must have been met *before* the disturbance of mood developed.
2. The disorder is not attributable to organic brain disease or to alcohol- or drug-related intoxication, dependence, or withdrawal.

3) PRESUMPTIVE STRESSFUL LIFE EVENTS SCALE (PSLES)

(Gurmeet Singh 1984)

Rank No	Life Events	Mean Stress score
1.	Going on pleasure trip or pilgrimage	20
2.	Wife begins or stops work	25
3.	Change in eating habits	27
4.	Change in social activities	28
5.	Reduction in number of family functions	29
6.	Gain of new family member	30
7.	Birth of daughter	30
8.	Change in sleeping habits	33
9.	Change in working conditions or transfer	33
10.	Retirement	35
11.	Begin or end schooling	36
12.	Outstanding personal achievement	37
13.	Change or expansion of business	37
14.	Change of residence	39
15.	Unfulfilled commitments	40
16.	Trouble with neighbour	40
17.	Getting married or engaged	43
18.	Appearing for an examination or interview	43
19.	Failure in examination	43
20.	Death of pet	44
21.	Major purchase or construction of house	46
22.	Break-up with friend	47
23.	Family conflict	47
24.	Minor violation of law	48
25.	Marriage of daughter or dependent sister	49
26.	Large loan	49

27.	Lack of son	51
28.	Self or family member unemployed	51
29.	Sexual problems	51
30.	Conflict over dowry (Self or spouse)	51
31.	Pregnancy of wife (wanted or unwanted)	52
32.	Prophecy of astrologer or palmist, etc.	52
33.	Trouble at work with colleagues, superiors or subordinates	52
34.	Illness of family member	52
35.	Financial loss or problems	54
36.	Son or daughter leaving home	55
37.	Major personal illness or injury	56
38.	Broken engagement or love affair	57
39.	Conflict with in-laws (other than dowry)	58
40.	Excessive alcohol or drug abuse by family member	58
41.	Robbery or theft	59
42.	Death of friend	60
43.	Property or crop damaged	61
44.	Marital conflict	64
45.	Death of close family member	66
46.	Lack of child	67
47.	Detention in jail or self or close family member	72
48.	Suspension or dismissal from job	76
49.	Marital separation/divorce	77
50.	Extra-marital relation of spouse	80
51.	Death of spouse	95

4) The Premorbid Adjustment Scale (PAS)

The Cannon-Spoor Premorbid Adjustment Scale includes rating scales about 5 domains of functioning and a general section of items about quality of life. The 5 domains are

(a) Sociability and withdrawal; (b) Peer relationships; (c) Scholastic performance;

(d) Adaptation to school; and (e) Social-sexual aspects of life.

The PAS covers 4 life periods:

(a) Childhood (up to age 11); (b) Early adolescence (12 to 15); (c) Late Adolescence (17 to 18); and (d) Adulthood (19 and above).

Childhood (ages 6 to 11)

1) Sociability and withdrawal

0 - Not withdrawn, actively and frequently seeks out social contacts; **2** - Mild withdrawal, occasionally seeks opportunities to socialize; **4** - Moderately withdrawn ; **6** - Unrelated to others, withdrawn and isolated, avoids contacts.

2) Peer relationships childhood

0 - Many friends (*more than 5*) **1** - *2–5 friends;* **2** - with a few friends (1 or 2), casual friendships with others; **3** - Only casual friends*;* **4** - Deviant (*unusual*) friendship patterns; **6** - Social isolate, no friends, not even superficial relationships

3) Scholastic performance

0 - Excellent student ; **1** - A's and B'; **2** - Good student ; **3** - Average student ; **4** - Fair student (*C's*); **5** - *D's* – failing some classes*;* **6** - Failing all classes

4) Adaptation to school

0 - Good adaptation,**1** - Likes school, few discipline problems;

2 - Fair adaptation, **3** - Sometimes truant; **4** - Poor adaptation, dislikes school, **5** - Expelled from school*;* **6** delinquency or vandalism directed against school

Early adolescence (ages 12 to 15)

1)sociability and withdrawal (score 0- 6) 2) peer relationships childhood (score 0- 6) 3) scholastic performance (score 0- 6) 4) adaptation to school(score 0- 6) 5) social-sexual aspects of life

Late adolescence (ages 16 to 18)

1)sociability and withdrawal (score 0- 6) 2) peer relationships childhood (score 0- 6) 3) scholastic performance (score 0- 6) 4) adaptation to school(score 0- 6) 5)Social-sexual aspects (score 0-6)

Adulthood (ages 19 and above)

1)sociability and withdrawal (score 0- 6) 2) peer relationships childhood (score 0- 6) 3) scholastic performance (score 0- 6) 4) adaptation to school(score 0- 6) 5)Social-sexual aspects (score 0-6)

General questions (each item score 0-6)

1. Education 2. Employment and school during a period of 6 months to 3 years before the onset of first episode 3. Change in work or

school performance within a period of 1 year or up to 6 months before onset of first episode 4. Job or school change during a period of 3 years to 6 months before the onset of first episode 5. Establishment of independence

6. Global assessment of highest level of functioning achieved in subject's life 7. Social-personal adjustment 8. Degree of interest in life 9. Energy level

GLOBAL ASSESSMENT OF FUNCTIONING (GAF) SCALE

100- 91 superior functioning in a wide range of activities, life's problems never seem to get out of hand, is sought out by others because of his or her many positive qualities. no symptoms.

90 -81 absent or minimal symptoms (e.g., mild anxiety before an exam), good

functioning in all areas, interested and involved in a wide range of activities. socially effective, generally satisfied with life, no more than everyday problems or concerns (e.g. an occasional argument with family members).

80 -71 if symptoms are present, they are transient and expectable reactions to psychosocial stressors (e.g., difficulty concentrating after family argument); no more than slight impairment in social, occupational or school functioning (e.g., temporarily failing behind in schoolwork).

70 -61 some mild symptoms (e.g. depressed mood and mild insomnia)

or some difficulty in social, occupational, or school functioning (e.g., occasional truancy, or theft within the household), but generally functioning pretty well, has some meaningful interpersonal relationships.

60- 51 moderate symptoms (e.g., flat affect and circumstantial speech, occasional panic attacks) or moderate difficulty in social, occupational, or school functioning (e.g.. few friends, conflicts with peers or co-workers).

50-41 serious symptoms (e.g.. suicidal ideation, severe obsessional rituals, frequent shoplifting) or any serious impairment in social, occupational, or school functioning (e.g., no friends, unable to keep a job).

40-31 some impairment in reality testing or communication (e.g., speech is at times illogical, obscure, or irrelevant) or major impairment in several areas, such as work or school, family relations, judgment, thinking, or mood (e.g., depressed man avoids friends, neglects family, and is unable to work; child frequently beats up younger children, is defiant at home, and is failing at school).

30- 21 behavior is considerably influenced by delusions or hallucinations or serious impairment in communication or judgment (e.g., sometimes incoherent, acts grossly inappropriately, suicidal preoccupation) or inability to function in almost all areas (e.g., stays in bed all day; no job,)

20- 11 some danger of hurting self or others (e.g., suicide attempts without clear

expectation of death; frequently violent; manic excitement) or occasionally fails to maintain minimal personal hygiene (e.g., smears feces) or gross impairment in communication (e.g., largely incoherent or mute).

10-1 persistent danger of severely hurting self or others (e.g., recurrent violence) or persistent inability to maintain minimal personal hygiene or serious suicidal act with clear expectation of death.

0 -inadequate information.

5) SCALE FOR ASSESSMENT OF PREMORBID SCHIZOID AND SCHIZOTYPAL TRAITS - (Foerster et al 1991)

Seven items were scored for the period between the ages of 5 and 16 years and rates on four point (0-3) scale

Item	Score
1. Sociability	0-active social interaction 3-withdrawn isolated no friends
2. Demonstrative affect	0-warm with spontaneous shows of affection 3-cold and aloof
3. Suspiciousness/sensitivity	0-never unduly suspicious or socialy anxious 3-marked social anxiety
4. Ideas of reference/ perceptual distortion	0-none 3- daily expression of cold ideas/ unusual perception/ideas of reference
5. Speech	0-normal 3-consistent pattern of clearly deviant speech with examples
6. Socialized antisocial behavior	0-never 3-severe and repeated
7. Unsocialized anti social behavior	0-never 0- severe and repeated

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POSITIVE AND NEGATIVE SYNDROME SCALE

PANSS

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STUDY	[_ _ _ _]	1-4
GROUP	[_ _]	5-6
PATIENT	[_ _ _]	7-9
RATING DAY	[_ _ _]	10-12
CARD NUMBER	[_ _]	13-14
Sex (1=male, 2=female)	[_]	15
Birthday (dd.mm.yy)	[_ _ : _ _ : _ _]	16-21
Date of hospitalization (dd.mm.yy)	[_ _ : _ _ : _ _]	22-27
First diagnosis	[_ _ _ . _ _]	28-32
Second diagnosis	[_ _ _ . _ _]	33-37
Diagnostic system (1=ICD9, 2=ICD10, 3=DSM3-R, 4=DSM4)	[_]	38
Age at onset	[_ _]	39-40
Course (1=first manifestation, 2=intermittent, 3=progredient, 4=chronic)	[_]	41
Duration of Current Episode Prior to Hospitalization (days)	[_ _ _]	42-44
Medication Prior to Hospitalization (0=none, 1=antidepr., 2=neuroleptics, 3=other)	[_]	45
Current Medication (cf. list of codes)	[_ _ _]	46-48
Educational level (1=remedial, 2=junior high, 3=high, 4=college)	[_]	49
DATE (dd.mm.yy)	[_ _ : _ _ : _ _]	50-55
INTERVIEWER	[_ _ _]	56-58
HOSPITAL	[_ _]	59-60
PATIENT ID (the hospital's internal PID)	[_ _ _ _ _ _ _ _ _ _ _ _]	61-72

0=Absent 1=Minimal 2=Mild 3=Moderate 4=Moderate severe 5=Severe 6=Extreme

1-12 dupl

CARD NUMBER [_ _] 13-14

POSITIVE SCALE (P)

P1 Delusions [_] 15
Beliefs which are unfounded, unrealistic, and idiosyncratic. Basis for rating: Thought content expressed in the interview and its influence on social relations and behavior.

P2 Conceptual disorganization [_] 16
Disorganized process of thinking characterized by disruption of goal-directed sequencing, e.g., circumstantiality, tangentiality, loose associations, non sequiturs, gross illogicality, or thought block. Basis for rating: Cognitive-verbal processes observed during the course of interview.

P3 Hallucinatory behavior [_] 17
Verbal report or behavior indicating perceptions which are not generated by external stimuli. These may occur in the auditory, visual, olfactory, or somatic realms. Basis for rating: Verbal report and physical manifestations during the course of interview as well as reports of behavior by primary care workers or family.

P4 Excitement [_] 18
Hyperactivity as reflected in accelerated motor behavior, heightened responsivity to stimuli, hypervigilance, or excessive mood lability. Basis for rating: Behavioral manifestations during the course of interview as well as reports of behavior by primary care workers or family.

P5 Grandiosity [_] 19
Exaggerated self-opinion and unrealistic convictions of superiority, including delusions of extraordinary abilities, wealth, knowledge, fame, power, and moral righteousness. Basis for rating: Thought content expressed in the interview and its influence on behavior.

P6 Suspiciousness/persecution [_] 20
Unrealistic and exaggerated ideas of persecution, as reflected in guardedness, a distrustful attitude, suspicious hypervigilance, or frank delusions that others mean one harm. Basis for rating: Thought content expressed in the interview and its influence on behavior.

P7 Hostility [_] 21
Verbal and nonverbal expressions of anger and resentment, including sarcasm, passive-aggressive behavior, verbal abuse, and assaultiveness. Basis for rating: Interpersonal behavior observed during the interview and reports by primary care workers or family.

NEGATIVE SCALE (N)

N1 Blunted affect [_] 22
Diminished emotional responsiveness as characterized by a reduction in facial expression, modulation of feelings, and communicative gestures. Basis for rating: Observation of physical manifestations of affective tone and emotional responsiveness during the course of interview.

N2 Emotional withdrawal [_] 23
Lack of interest in, involvement with, and affective commitment to life's events. Basis for rating: Reports of functioning from primary care workers or family and observation of interpersonal behavior during the course of interview.

N3 Poor rapport [_] 24
Lack of interpersonal empathy, openness in conversation, and sense of closeness, interest, or involvement with the interviewer. This is evidenced by interpersonal distancing and reduced verbal and nonverbal communication. Basis for rating: Interpersonal behavior during the course of interview.

0=Absent 1=Minimal 2=Mild 3=Moderate 4=Moderate severe 5=Severe 6=Extreme

N4 Passive/apathetic social withdrawal [_] 25
Diminished interest and initiative in social interactions due to passivity, apathy, anergy, or avolition. This leads to reduced interpersonal involvements and neglect of daily activities.

N5 Difficulty in abstract thinking [_] 26
Impairment in the use of the abstract-symbolic mode of thinking, as evidenced by difficulty in classification, forming generalizations, and proceeding beyond concrete or egocentric thinking in problem-solving tasks. Basis for rating: Responses to questions on similarities and proverb interpretation, and use of concrete vs. abstract mode during the course of interview.

N6 Lack of spontaneity and flow of conversation [_] 27
Reduction in the normal flow of communication associated with apathy, avolition, defensiveness, or cognitive deficit. This is manifested by diminished fluidity and productivity of the verbal-interactional process. Basis for rating: Cognitive-verbal processes observed during the course of interview.

N7 Stereotyped thinking [_] 28
Decreased fluidity, spontaneity, and flexibility of thinking, as evidenced in rigid, repetitious, or barren thought content. Basis for rating: Cognitive-verbal processes during the course of interview.

GENERAL PSYCHOPATHOLOGY SCALE (G)

G1 Somatic concern [_] 29
Physical complaints or beliefs about bodily illness or malfunctions. This may range from a vague sense of ill being to clear-cut delusions of catastrophic physical disease. Basic for rating: Thought content expressed in the interview.

G2 Anxiety [_] 30
Subjective experience of nervousness, worry, apprehension, or restlessness, ranging from excessive concern about the present or future to feelings of panic. Basis for rating: Verbal report during the course of interview and corresponding physical manifestations.

G3 Guilt feelings [_] 31
Sense of remorse or self-blame for real or imagined misdeeds in the past. Basis for rating: Verbal report of guilt feelings during the course of interview and the influence on attitudes and thoughts.

G4 Tension [_] 32
Overt physical manifestations of fear, anxiety, and agitation, such as stiffness, tremor, profuse sweating, and restlessness. Basis for rating: Verbal report attesting to anxiety and, thereupon, the severity of physical manifestations of tension observed during the interview.

G5 Mannerisms and posturing [_] 33
Unnatural movements or posture as characterized by an awkward, stilted, disorganized, or bizarre appearance. Basis for rating: Observation of physical manifestations during the course of interview as well as reports from primary care workers or family.

G6 Depression [_] 34
Feelings of sadness, discouragement, helplessness, and pessimism. Basis for rating: Verbal report of depressed mood during the course of interview and its observed influence on attitude and behavior.

G7 Motor retardation [_] 35
Reduction in motor activity as reflected in slowing or lessening of movements and speech, diminished responsiveness to stimuli, and reduced body tone. Basis for rating: manifestations during the course of interview as well as reports by primary care workers or family.

G8 Uncooperativeness [_] 36
Active refusal to comply with the will of significant others, including the interviewer, hospital staff, or family, which may be associated with distrust, defensiveness, stubbornness, negativism, rejection of authority, hostility, or belligerence. Basis for rating: Interpersonal behavior observed during the course of interview as well as reports by primary care workers or family.

G9 Unusual thought content [_] 37
Thinking characterized by strange, fantastic, or bizarre ideas, ranging from those which are remote or atypical to those which are distorted, illogical, and patently absurd. Basis for rating: Thought content expressed during the course of interview.

G10 Disorientation [_] 38
Lack of awareness of one's relationship to the milieu, including persons, place, and time, which may be due to confusion or withdrawal. Basis for rating: Responses to interview questions on orientation.

G11 Poor attention [_] 39
Failure in focused alertness manifested by poor concentration, distractibility from internal and external stimuli, and difficulty in harnessing, sustaining, or shifting focus to new stimuli. Basis for rating: Manifestations during the course of interview.

G12 Lack of judgment and insight [_] 40
Impaired awareness or understanding of one's own psychiatric condition and life situation. This is evidenced by failure to recognize past or present psychiatric illness or symptoms, denial of need for psychiatric hospitalization or treatment, decisions characterized by poor anticipation of consequences, and unrealistic short-term and long-range planning. Basis for rating: Thought content expressed during the interview.

G13 Disturbance of volition [_] 41
Disturbance in the willful initiation, sustenance, and control of one's thoughts, behavior, movements, and speech. Basis for rating: thought content and behavior manifested in the course of interview.

G14 Poor impulse control [_] 42
Disordered regulation and control of action on inner urges, resulting in sudden, unmodulated, arbitrary, or misdirected discharge of tension and emotions without concern about consequences. Basis for rating: Behavior during the course of interview and reported by primary care workers or family.

G15 Preoccupation [_] 43
Absorption with internally generated thoughts and feelings and with autistic experiences to the detriment of reality orientation and adaptive behavior. Basis for rating: Interpersonal behavior observed during the course of interview.

G16 Active social avoidance [_] 44
Diminished social involvement associated with unwarranted fear, hostility, or distrust. Basis for rating: Reports of social functioning by primary care workers or family.

FORMALE DENKSTÖRUNGEN

Z1 Verschwommenes Denken [_] 45
Die Begriffe sind unscharf und vage, die Äusserungen sind in grösseren Zusammenhängen nicht verständlich. Ein vager thematischer Zusammenhang bleibt erkennbar, Themenwechsel vollziehen sich durch allmähliches Entgleiten des bisherigen Themas. Typisch finden sich auch Vorbeireden, Kontaminationen, Verschiebungen und Substitutionen sowie Neologismen.

Z2 Sprunghaftes Denken [_] 46
Das Denken ist assoziativ gelockert, es treten zahlreiche, den Sinnzusammenhang durchbrechende Gedankensprünge auf, so dass der Eindruck einer bei jedem Einfall wechselnden Denkrichtung entsteht.

KUPPUSWAMY'S SOCIO-ECONOMIC STATUS SCALE

(A) Education Score		
1	Profession or Honours	*7*
2	Graduate or post graduate	*6*
3	Intermediate or post high school diploma	*5*
4	High school certificate	*4*
5	Middle school certificate	*3*
6	Primary school certificate	*2*
7	Illiterate	*1*

(B) Occupation Score		
1	Profession	*10*
2	Semi-Profession	*6*
3	Clerical, Shop-owner, Farmer	*5*
4	Skilled worker	*4*
5	Semi-skilled worker	*3*
6	Unskilled worker	*2*
7	Unemployed	*1*

(C) Monthly family income in Rs		*Score*	*Modified for 1998* [3] *in* Rs	Modified for 2012 in Rs
1	≥ 2000	*12*	≥ 13500	≥32050
2	1000-1999	*10*	6750 - 13499	*16020 – 32049*
3	750-999	*6*	5050 - 6749	*12020 – 16019*
4	500-749	*4*	3375 - 5049	*8010 – 12019*
5	300-499	*3*	2025 - 3374	*4810 – 8009*
6	101-299	*2*	676 - 2024	*1601 – 4809*
7	≤ 100	*1*	≤ 675	*≤ 1600*

Total Score	Socioeconomic class
26-29	Upper (I)
16-25	Upper Middle (II)
11-15	Middle/Lower middle (III)
5-10	Lower/Upper lower (IV)
<5	Lower (V)

INFORMATION TO PARTICIPANTS

Title: STUDY OF LIFE EVENTS AND PREMORBID FUNCTION IN RECENT ONSET SCHIZOPHRENIA

Principal Investigator: DR .

MD Psychiatry Post Graduate,

IMH , Madras Medical College

Name of Participant:

Site : IMH, MMC, Chennai

You are invited to take part in this research. The information in this document is meant to help you decide whether or not to take part. Please feel free to ask if you have any queries or concerns.

What is the purpose of research?

The purpose of this study is to find the number of life event experienced and level of function before the onset of illness. stressful life events may trigger the exacerbation of psychotic symptoms in schizophrenia, the mechanisms through which affected individuals respond to life events during the early course of this disorder have received limited attention.

From this study , the risk individual can be identified early , the relapse of disease and exacerbation of symptoms can be prevented by early interventions

We have obtained permission from the Institutional Ethics Committee. .

Study Procedures

The study involves evaluation of life events and premorbid function for which we will be interviewing you with various questionnaires like life events scale, premorbid adjustment scale, personality assessment scale and global assessment functioning scale, The scales will be also administered to general population those who are disease free individual

You will be interviewed while you are registered as out patient or admitted in our hospital. You will be required to spare roughly half an hour for a one-time interview during your stay in the hospital.

Possible benefits to you - If you are found to be risk individual you will be further managed for this condition.

Possible benefits to other people

The results of the research may provide benefits to the society in terms of advancement of medical knowledge and/or therapeutic benefit to future patients.

Confidentiality of the information obtained from you

You have the right to confidentiality regarding the privacy of your medical information (personal details, results of physical examinations, investigations, and your medical history). By signing this document, you will be allowing the research team investigators, other study personnel and the Institutional Ethics Committee, to view your data, if required.

The information from this study, if published in scientific journals or presented at scientific meetings, will not reveal your identity.

How will your decision to not participate in the study affect you?

Your decision not to participate in this research study will not affect your medical care or your relationship with the investigator or the institution. You will be taken care of and you will not lose any benefits to which you are entitled.

Can you decide to stop participating in the study once you start?

The participation in this research is purely voluntary and you have the right to withdraw from this study at any time during the course of the study without giving any reasons. However, it is advisable that you talk to the research team prior to stopping the treatment/discontinuing of procedures etc.

Signature of Investigator Signature of Participant

Date Date

INFORMED CONSENT FORM

Title of the study - LIFE EVENTS AND PREMORBID FUNCTION IN RECENT ONSET SCHIZOPHRENIA

Name of the participant: _____

Name of the Principal/Co-Investigator:

Name of the Institution: IMH, MMC

Name and address of the sponsor / agency(ies), if any: _____

I,_____(name of participant), have read the information in this form (or it has been read to me). I was free to ask any questions and they have been answered. I am over 18 years of age and, exercising my free power of choice, hereby give my consent to be included as a participant in the study about the **A STUDY OF LIFE EVENTS AND PREMORBID FUNCTION IN RECENT ONSET SCHIZOPHRENIA**

(1) I have read and understood this consent form and the information provided to me.

(2) I have had the consent document explained to me.

(3) I have been explained about the nature of the study.

(4) I have been explained about my rights and responsibilities by the investigator.

(5) I have informed the investigator of all the treatments I am taking or have taken in the past, including any native (alternative) treatments.

(6) I am aware of the fact that I can opt out of the study at any time without having to give any reason and this will not affect my future treatment in the hospital.

(7) I hereby give permission to the investigators to release the information obtained from me as result of participation in this study to the regulatory authorities, Government agencies, and ethics committee. I understand that they may inspect my original records.

(8) I understand that my identity will be kept confidential if my data are publicly presented.

(9) I have had my questions answered to my satisfaction.

(10) I consent voluntarily to participate as a participant in the research study.

I am aware, that if I have any questions during this study, I should contact the investigators. By signing this consent from, I attest that the information given in this document has been clearly explained to me and understood by me. I will be given a copy of this consent document.

For adult participants

Name and signature / thumb impression of the participant (or legal representative if

Participant is incompetent):

(Name) _____(Signature)_____

Date:_____

Name and signature of impartial witness (required for illiterate patients):

(Name) _____ (Signature)_____

Date:_____

Address and contact number of the impartial witness:

_____

Name and signature of the Investigator or his representative obtaining consent:

(Name) _____ (Signature)_____

(Date)_____

ஆராய்ச்சி தகவல் தாள்

தலைப்பு: ஸ்கிசோப்ரினியா (மனசிதைவு) நோயாளிகளில், வாழ்க்கையின் முக்கிய நிகழ்வுகள் மற்றும் நோய்க்கு முந்திய வாழ்கை முறை பற்றிய ஆய்வு

ஆராய்ச்சி செய்பவரின் பெயர்:

பங்குகொள்பவரின் பெயர்:

மருத்துவ நிலையம்: அரசு மனநல காப்பகம், இராஜிவ் காந்தி அரசு பொது மருத்துவமனை , சென்னை

ஆராய்ச்சியின் நோக்கம் ; ஸ்கிசோப்ரினியா (மனசிதைவு) நோயாளிகளில், வாழ்க்கையின் முக்கிய நிகழ்வுகள் மற்றும் நோய்க்கு முந்திய வாழ்கை முறை பற்றிய ஆய்வு நடைபெறுகிறது. நீங்களும் இந்த ஆராய்ச்சியில் பங்கேற்க விரும்புகிறோம்.

முடிவுகளை அல்லது கருத்துக்களை வெளியிடும்போதோ அல்லது ஆராய்ச்சியின் போதோ தங்களது பெயரையோ அல்லது அடையாளங்களையோ வெளியிடமாட்டோம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த ஆய்வின் முடிவுகளை ஆராய்ச்சியின்போது அல்லது ஆராய்ச்சியின் முடிவின் போது தங்களுக்கு அறிவிக்கப்படும் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த ஆராய்ச்சியில் பங்கேற்பது தங்களுடைய விருப்பத்தின் பேரில் தான் இருக்கிறது. மேலும் நீங்கள் எந்நேரமும் இந்த ஆராய்ச்சியிலிருந்து பின்வாங்கலாம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

ஆராய்ச்சியாளரின் கையொப்பம் பங்கேற்பாளர் கையொப்பம்

நாள்:

பாதுகாவலர் கையொப்பம்

ஆராய்ச்சி ஒப்புதல் படிவம்

ஆராய்ச்சியின் தலைப்பு- ஸ்கிசோப்ரினியா (மனசிதைவு) நோயாளிகளில், வாழ்க்கையின் முக்கிய நிகழ்வுகள் மற்றும் நோய்க்கு முந்திய வாழ்கை முறை பற்றிய ஆய்வு

பங்குகொள்வரின் பெயர்:

ஆராய்ச்சி செய்பவரின் பெயர்:

மருத்துவ நிலையம்: அரசு மனநல காப்பகம், சென்னை

_____எனும் நான் எனக்கு கொடுக்கப்பட்ட தகவல் தாளினை படித்து புரிந்துகொண்டேன். நான் 18 வயதை கடந்திருப்பதால் என்னுடைய சுய நினைவுடனும் மற்றும் முழு சுதந்திரத்துடனும் இந்த ஆராய்ச்சியில் என்னைச் சேர்த்துக்கொள்ள சம்மதிக்கிறேன்.

நான் எனக்கு கொடுக்கப்பட்ட தகவல் தாளினை படித்து புரிந்துகொண்டேன்.

எனக்கு இந்த ஆராய்ச்சியின் ஒப்புதல் படிவம் விளக்கப்பட்டது.

எனக்கு இந்த ஆராய்ச்சியின் நோக்கமும், விவரங்களும் விளக்கப்பட்டது.

எனக்கு என்னுடைய உரிமைகளை பற்றி விளக்கப்பட்டது.

நான் இதுவரை எடுத்துக்கொண்ட அனைத்து மருத்துவ முறைகளைப் பற்றி தெரிவித்திருக்கிறேன்.

இந்த ஆராய்ச்சியில் இருந்து நான் எந்நேரமும் பின் வாங்கலாம் என்பதையும் அதனால் எந்த பாதிப்பும் எற்படாது என்பதையும் நான் புரிந்துகொண்டேன்.

என்னை பற்றிய எந்த தகவல்களும் அடையாளமும் வெளியிடபட மாட்டாது என்பதை நான் புரிந்துகொண்டேன்.

என்னுடைய முழு சுதந்திரத்துடனும் இந்த ஆராய்ச்சியில் என்னைச் சேர்த்துக்கொள்ள சம்மதிக்கிறேன்.

பங்கேற்பாளர் பெயர் மற்றும் கையொப்பம்:_____&_____

நாள்:_____

பாதுகாவலர் பெயர் மற்றும் கையொப்பம்: _____&_____

நாள்:_____

ஆராய்ச்சியாளரின் பெயர் மற்றும் கையொப்பம்:_____&_____
நாள்:_____

CASES

NAME	SEX	AGE	RURAL /URBAN	SES	MARITAL STATUS	NO OF LIFE EVENTS	LIFE EVENTSSCORE	NEGATIVE SCORE	PSSS	DUP	FAMILY H/O	GAF	PAS
1	M	18	URBAN	LOW	UM	0	0	10	10	2	POSITIVE	72	0.12
2	M	18	URBAN	LOW	UM	1	20	28	12	8	POSITIVE	52	0.32
3	M	17	RURAL	M	UM	1	27	24	14	10	NEGATIVE	56	0.34
4	M	17	RURAL	M	UM	1	48	18	17	12	POSITIVE	69	0.24
5	M	19	RURAL	LOW	UM	2	122	31	15	10	NEGATIVE	45	0.38
6	M	19	RURAL	LOW	UM	1	43	8	11	12	POSITIVE	76	0.11
7	M	19	RURAL	LOW	UM	2	148	27	13	4	NEGATIVE	54	0.32
8	M	20	URBAN	M	UM	1	39	8	10	6	NEGATIVE	76	0.12
9	M	20	RURAL	LOW	UM	2	94	34	14	8	POSITIVE	54	0.42
10	M	22	RURAL	LOW	UM	2	94	34	16	8	POSITIVE	44	0.46
11	M	23	RURAL	LOW	UM	1	43	4	10	18	POSITIVE	78	0.06
12	M	23	RURAL	LOW	UM	2	76	36	17	26	NEGATIVE	42	0.56
13	M	23	URBAN	LOW	UM	3	190	33	19	12	NEGATIVE	44	0.52
14	M	24	RURAL	LOW	M	3	208	28	20	24	NEGATIVE	49	0.52
15	M	25	RURAL	LOW	UM	2	94	14	14	8	POSITIVE	67	0.21
16	M	27	RURAL	M	M	4	241	31	17	14	POSITIVE	58	0.46
17	M	27	URBAN	LOW	UM	2	119	36	19	16	NEGATIVE	60	0.41
18	M	28	URBAN	LOW	M	3	208	35	19	8	NEGATIVE	42	0.52
19	M	28	RURAL	LOW	UM	3	241	31	16	10	POSITIVE	56	0.46
20	M	29	URBAN	LOW	M	3	233	32	17	6	POSITIVE	32	0.62
21	M	29	RURAL	LOW	UM	2	81	28	16	22	NEGATIVE	56	0.36
22	M	29	URBAN	LOW	UM	2	122	21	12	24	NEGATIVE	58	0.42
23	M	31	RURAL	M	M	4	117	31	14	24	NEGATIVE	39	0.62
24	M	33	RURAL	LOW	M	5	298	32	19	24	NEGATIVE	28	0.68
25	M	35	RURAL	LOW	M	5	251	34	20	16	NEGATIVE	30	0.68
26	M	35	RURAL	LOW	UM	5	292	29	18	34	NEGATIVE	44	0.52
27	M	37	RURAL	LOW	UM	3	190	19	17	35	POSITIVE	56	0.32
28	M	40	RURAL	LOW	M	4	251	34	16	1	POSITIVE	43	0.58
29	M	40	RURAL	LOW	M	5	298	36	19	12	POSITIVE	31	0.68
30	M	42	RURAL	M	M	4	190	30	17	12	POSITIVE	46	0.54
31	M	44	RURAL	LOW	UM	3	208	32	12	24	NEGATIVE	49	0.58
32	M	46	RURAL	LOW	M	5	294	28	15	18	POSITIVE	30	0.58
33	M	46	URBAN	LOW	M	4	210	21	14	10	POSITIVE	29	0.61
34	F	19	RURAL	LOW	UM	1	28	8	10	18	NEGATIVE	75	0.12
35	F	19	RURAL	LOW	UM	2	138	6	11	10	NEGATIVE	70	0.18
36	F	20	RURAL	M	UM	1	40	9	10	14	NEGATIVE	71	0.18
37	F	21	URBAN	LOW	M	1	47	12	11	8	POSITIVE	69	0.22
38	F	24	RURAL	LOW	UM	2	102	28	11	16	NEGATIVE	44	0.3
39	F	25	RURAL	LOW	M	1	30	7	10	18	NEGATIVE	79	0.12

40	F	26	RURAL	M	UM	2	81	21	14	25	NEGATIVE	56	0.34
41	F	27	URBAN	LOW	M	1	74	20	16	9	POSITIVE	70	0.26
42	F	27	RURAL	LOW	M	1	40	10	10	3	POSITIVE	79	0.12
43	F	28	RURAL	LOW	M	1	95	24	11	12	NEGATIVE	66	0.32
44	F	29	URBAN	LOW	M	1	49	29	11	14	POSITIVE	56	0.42
45	F	29	RURAL	M	M	2	102	32	13	18	POSITIVE	43	0.52
46	F	33	RURAL	LOW	M	2	95	21	12	23	NEGATIVE	58	0.32
47	F	34	URBAN	LOW	M	3	241	34	14	9	POSITIVE	51	0.48
48	F	35	RURAL	LOW	M	1	95	7	10	6	POSITIVE	79	0.12
49	F	35	URBAN	LOW	M	1	80	14	11	23	POSITIVE	69	0.26
50	F	35	URBAN	LOW	M	2	117	31	13	32	NEGATIVE	52	0.48
51	F	37	RURAL	M	M	3	251	30	17	24	POSITIVE	39	0.42
52	F	37	RURAL	LOW	M	1	95	24	14	18	NEGATIVE	59	0.32
53	F	38	RURAL	LOW	M	2	175	21	16	14	POSITIVE	60	0.38
54	F	38	URBAN	LOW	M	1	64	9	14	16	NEGATIVE	79	0.12
55	F	40	URBAN	M	M	3	251	32	17	12	NEGATIVE	32	0.56
56	F	44	URBAN	LOW	M	1	80	16	11	23	NEGATIVE	61	0.24
57	F	48	URBAN	LOW	M	1	95	14	10	21	POSITIVE	69	0.26
58	F	48	RURAL	LOW	M	2	117	21	14	23	NEGATIVE	55	0.36
59	F	49	RURAL	LOW	M	5	292	36	15	12	NEGATIVE	31	0.62
60	F	49	RURAL	LOW	M	4	251	28	16	9	POSITIVE	39	0.42

CONTROLS

NAME	SEX	AGE	RURAL /URBAN	SES	MARITAL STATUS	NO OF LIFE EVENTS	LIFE EVENTSS CORE	NEGATIVE SCORE	PSSS	DUP	FAMILY H/O	GAF	PAS
1	M	17	RURAL	M	UM	0	0	0	4	NIL	NEGATIVE	98	0.08
2	M	17	RURAL	LOW	UM	0	0	2	6		NEGATIVE	90	0.06
3	M	18	RURAL	M	UM	1	20	1	8		NEGATIVE	88	0.12
4	M	18	URBAN	M	UM	1	25	4	8		NEGATIVE	99	0.18
5	M	18	URBAN	LOW	UM	1	27	1	9		NEGATIVE	98	0.08
6	M	18	RURAL	LOW	UM	2	47	2	11		POSITIVE	88	0.09
7	M	20	RURAL	LOW	UM	1	29	1	6		NEGATIVE	96	0.12
8	M	20	RURAL	LOW	UM	3	138	0	14		NEGATIVE	94	0.08
9	M	20	URBAN	LOW	UM	1	76	0	7		NEGATIVE	93	0.24
10	M	21	RURAL	LOW	UM	1	51	2	5		POSITIVE	98	0.18
11	M	22	URBAN	LOW	M	0	0	3	4		NEGATIVE	96	0.08
12	M	23	RURAL	LOW	UM	2	100	2	12		NEGATIVE	87	0.18
13	M	24	RURAL	LOW	M	0	0	1	2		NEGATIVE	96	0.08
14	M	24	RURAL	LOW	UM	1	33	3	5		NEGATIVE	76	0.14
15	M	25	RURAL	LOW	M	1	47	2	8		NEGATIVE	98	0.22
16	M	26	RURAL	LOW	UM	2	45	0	9		NEGATIVE	90	0.26
17	M	26	URBAN	LOW	M	0	0	2	3		NEGATIVE	88	0.1
18	M	27	URBAN	LOW	UM	3	96	3	8		NEGATIVE	97	0.22
19	M	27	RURAL	LOW	M	1	52	1	7		NEGATIVE	94	0.28
20	M	28	RURAL	LOW	UM	2	117	3	6		NEGATIVE	99	0.32
21	M	29	RURAL	M	M	0	0	0	3		NEGATIVE	92	0.04
22	M	30	URBAN	LOW	M	2	102	2	7		NEGATIVE	88	0.18
23	M	32	URBAN	M	M	1	43	3	9		NEGATIVE	70	0.12
24	M	32	RURAL	LOW	M	0	0	2	3		NEGATIVE	98	0.08
25	M	34	RURAL	LOW	M	1	30	1	4		POSITIVE	88	0.06
26	M	35	RURAL	M	M	1	40	0	3		NEGATIVE	87	0.24
27	M	35	URBAN	LOW	UM	2	94	2	6		NEGATIVE	98	0.16
28	M	41	RURAL	LOW	M	1	33	4	4		NEGATIVE	94	0.24
29	M	42	RURAL	LOW	M	2	146	2	10		NEGATIVE	92	0.28
30	M	42	RURAL	M	M	1	35	2	5		NEGATIVE	89	0.12
31	M	43	RURAL	LOW	M	2	113	3	10		NEGATIVE	87	0.22
32	M	44	RURAL	LOW	M	1	28	4	9		NEGATIVE	96	0.12
33	M	48	RURAL	M	M	1	37	2	7		NEGATIVE	97	0.08
34	F	18	RURAL	LOW	UM	0	0	3	5		NEGATIVE	86	0.06
35	F	18	RURAL	LOW	UM	1	27	1	3		NEGATIVE	83	0.24

36	F	20	URBAN	M	M	0	0	3	4		NEGATIVE	83	0.08
37	F	22	URBAN	LOW	UM	2	47	1	7		NEGATIVE	82	0.14
38	F	24	RURAL	LOW	M	0	0	3	3		POSITIVE	84	0.24
39	F	26	URBAN	LOW	UM	2	53	1	11		NEGATIVE	82	0.16
40	F	26	RURAL	M	M	0	0	3	3		NEGATIVE	81	0.1
41	F	28	RURAL	LOW	M	1	77	0	4		NEGATIVE	83	0.08
42	F	27	RURAL	LOW	M	1	40	3	7		NEGATIVE	85	0.18
43	F	28	RURAL	M	M	0	0	4	4		NEGATIVE	86	0.12
44	F	28	RURAL	LOW	M	1	20	5	7		NEGATIVE	97	0.16
45	F	29	RURAL	M	M	2	102	1	8		NEGATIVE	93	0.18
46	F	31	RURAL	LOW	M	1	95	2	5		NEGATIVE	97	0.08
47	F	32	URBAN	LOW	M	2	100	5	10		POSITIVE	91	0.22
48	F	34	RURAL	LOW	M	1	95	2	6		NEGATIVE	90	0.12
49	F	34	RURAL	LOW	M	2	80	1	8		NEGATIVE	89	0.14
50	F	35	URBAN	LOW	M	1	117	3	11		NEGATIVE	83	0.46
51	F	36	RURAL	LOW	M	2	101	1	10		NEGATIVE	77	0.14
52	F	37	RURAL	LOW	M	1	95	0	9		NEGATIVE	87	0.12
53	F	39	RURAL	LOW	M	2	40	2	9		NEGATIVE	85	0.08
54	F	38	URBAN	LOW	M	1	33	3	3		NEGATIVE	80	0.22
55	F	40	RURAL	LOW	M	2	63	1	5		NEGATIVE	91	0.14
56	F	42	URBAN	LOW	M	1	25	3	9		NEGATIVE	93	0.08
57	F	44	URBAN	M	M	2	84	2	8		NEGATIVE	96	0.24
58	F	45	RURAL	LOW	M	2	47	1	8		POSITIVE	92	0.08
59	F	45	RURAL	LOW	M	1	80	4	5		NEGATIVE	92	0.08
60	F	46	RURAL	M	M	1	95	2	8		NEGATIVE	88	0.08